

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

QUALCOMM INC., a Delaware corporation,
and QUALCOMM TECHNOLOGIES, INC.,
a Delaware corporation,

Plaintiffs,

v.

ARM HOLDINGS PLC, f/k/a ARM LTD., a
U.K. corporation,

Defendant.

REDACTED - PUBLIC VERSION
(Filed November 21, 2025)

C.A. No. 24-490-MN

[REDACTED]

[REDACTED]

**VOLUME 2 OF 3 (EXHIBITS 7-13) TO THE
DECLARATION OF MEREDITH POHL IN SUPPORT OF DEFENDANT ARM
HOLDINGS PLC'S OMNIBUS OPENING MEMORANDUM IN SUPPORT OF ITS
MOTION TO EXCLUDE THE EXPERT OPINIONS AND TESTIMONY OF ERIC A.
POSNER AND PARTIALLY EXCLUDE THE EXPERT OPINIONS AND TESTIMONY
OF PATRICK F. KENNEDY**

Dated: October 24, 2025

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I, Meredith Pohl, declare as follows:

I am an attorney with the law firm of Kirkland & Ellis LLP, counsel for Arm Holdings PLC (“Arm”) in the above referenced action. I submit this declaration in support of Arm’s Omnibus Opening Memorandum in Support of its Motion to Exclude the Expert Opinions and Testimony of Eric A. Posner and Partially Exclude the Expert Opinions and Testimony of Patrick F. Kennedy.

1. Attached as **Exhibit 1** is a true and correct copy of the October 2, 2025 deposition transcript of Eric Posner. [REDACTED]

2. Attached as **Exhibit 2** is a true and correct copy of the August 8, 2025 Expert Report of Eric A. Posner. [REDACTED]

3. Attached as **Exhibit 3** is a true and correct excerpted copy of the September 5, 2025 Rebuttal Expert Report of Professor Timothy S. Simcoe. [REDACTED]

4. Attached as **Exhibit 4** is a true and correct copy of the September 19, 2025 Expert Reply Report of Eric A. Posner. [REDACTED]

5. Attached as **Exhibit 5** is a true and correct copy of the *Curriculum Vitae* of Professor Eric A. Posner.

6. Attached as **Exhibit 6** is a true and correct copy of an April 9, 2025 letter from Catherine Nyarady to Jay Emerick. [REDACTED]

7. Attached as **Exhibit 7** is a true and correct copy of an April 28, 2025 letter from Catherine Nyarady to Jay Emerick. [REDACTED]

8. Attached as **Exhibit 8** is a true and correct copy of a July 19, 2021 article by Professor Carl Shapiro, titled “Vertical Mergers and Input Foreclosure Lessons from the *AT&T/Time Warner Case*,” bearing Bates stamp QCVARM_1154682.

9. Attached as **Exhibit 9** is a true and correct copy of the December 18, 2023 Merger Guidelines from the U.S. Department of Justice and the Federal Trade Commission, bearing Bates stamp ARMQC_02794706.

10. Attached as **Exhibit 10** is a true and correct copy of the May 30, 2013 Technology License Agreement between Arm and Qualcomm, bearing Bates stamp ARM_00103918. [REDACTED]

11. Attached as **Exhibit 11** is a true and correct excerpted copy of the July 11, 2025 deposition transcript of Jonathan Weiser. [REDACTED]

12. Attached as **Exhibit 12** is a true and correct copy of the August 8, 2025 Expert Report of Patrick F. Kennedy, Ph.D. [REDACTED]

13. Attached as **Exhibit 13** is a true and correct copy of the September 25, 2025 deposition transcript of Patrick Kennedy, Ph.D. [REDACTED]

14. Attached as **Exhibit 14** is a true and correct copy of the September 19, 2025 Reply Expert Report of Patrick F. Kennedy, Ph.D. [REDACTED]

15. Attached as **Exhibit 15** is a true and correct copy of a 1990 article by Oliver Hart and Jean Tirole, titled “Vertical Integration and Market Foreclosure,” bearing Bates stamp QCVARM_1154355.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed this 24th day of October 2025 at Washington, D.C.

/s/ Meredith Pohl
Meredith Pohl

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on October 24, 2025, a copy of the foregoing document was served on the counsel listed below in the manner indicated:

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April 28, 2025

Via Email

Jay Emerick
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333 West Wolf Point Plaza
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Re: *Qualcomm Inc. v. Arm Holdings Plc.*
C.A. No. 24-490-MN

Dear Jay,

I write in response to your April 17, 2025 letter purporting to “seek clarity” about Qualcomm’s California Unfair Competition Law (“UCL”) claim but in fact includes a laundry list of questions about the support for that claim. To the extent Arm wished to ask about the legal and factual bases for Qualcomm’s UCL claim, it could have done so through properly framed interrogatories. But it cannot circumvent discovery limitations through requests for “clarity” about discovery it chose not to take. And it is surprising that you would demand a “prompt response” when Arm had yet to produce any meaningful discovery on the topics most relevant to Qualcomm’s UCL claim and first produced any documents only last week after your letter. The scope and grounds of Qualcomm’s UCL claim are set forth in Qualcomm’s First Amended Complaint (“FAC”) and its proposed Second Amended Complaint (“SAC”). Given that Arm has provided no meaningful discovery in this case, Qualcomm cannot provide they type of detailed contention that Arm seems to demand. *Novanta Corp. v. Iridion Laser, Inc.*, 2016 WL 4987110, at *7 (D. Del. Sept. 16, 2016) (collecting decisions holding that contention interrogatories are premature before substantial documentary or testimonial discovery has been completed).

Nevertheless, in the interest of efficiency and avoiding unnecessary disputes, Qualcomm provides the following information regarding the scope of its UCL claim. This is based on Qualcomm’s current understanding, Qualcomm reserves all rights to amend or supplement in the future, including based on any new facts that Qualcomm learns through discovery.

As the FAC and SAC make clear, Qualcomm is not asserting a claim for monopolization under Section 2 of the Sherman Act; it is asserting a claim under the UCL’s “unfair” prong.

Qualcomm also alleges that Arm’s business acts and practices were unlawful because, in addition to being unfair, they also violated California tort law. Thus, Qualcomm need not identify a relevant market, *Epic Games, Inc. v. Apple, Inc.*, 67 F.4th 946, 1002 (9th Cir. 2023), in the manner the Sherman Act may require. Qualcomm reserves the right to prove that Arm’s business acts and practices were “unfair” under any tests California courts apply in cases under that prong. In support of that claim, Qualcomm reserves the right to present evidence that (among other things) Arm is engaged in a campaign to prevent Qualcomm from developing and marketing products with custom CPUs that threaten to outcompete products containing Arm’s off-the-shelf CPU designs, with the goal of forcing reliance on Arm’s off-the-shelf CPU designs and/or preventing Qualcomm from making chips compatible with the Arm ISA. *See, e.g.*, SAC ¶¶ 206–208.

Finally, Qualcomm disagrees with the assertions in the final paragraph of your letter. The SAC merely clarifies and elaborates the allegations of the FAC. Qualcomm has not made materially “new contentions” or “re-formulat[ed] ... its UCL claim.” Arm could have requested any of this information by interrogatory long ago, rather than allowing “weeks” to elapse before raising these concerns, or raised its purported concerns earlier. We also fail to see how Arm could have been prejudiced by the purported “disavow[al of] the monopolization allegations,” especially given that Qualcomm provided its SAC several weeks before your letter, the amendment made clear that Qualcomm was *not* asserting a claim under Section 2 of the Sherman Act, and Arm has continued to refuse to produce discovery regarding this claim.

Sincerely,

/s/ Catherine Nyarady

Catherine Nyarady

Exhibit 8



Vertical Mergers and Input Foreclosure Lessons from the *AT&T/Time Warner* Case

Carl Shapiro¹

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Abstract

This article offers a practical guide to analyzing vertical mergers using the general approach to input foreclosure and raising rivals' costs that is described in the 2020 Vertical Merger Guidelines that were issued by the U.S. Department of Justice and the Federal Trade Commission. The step-by-step analysis described here draws lessons from how that theory of harm played out in the lone vertical merger case that has been litigated by the antitrust agencies in recent decades: the 2018 challenge by the Department of Justice to the merger between AT&T and Time Warner. I testified in court as the DOJ's economic expert in that case. I explain here how to quantify the increase in rivals' costs and the elimination of double marginalization that are caused by a vertical merger and how to evaluate their net effect on downstream customers. I also explain how this economic analysis fits into the three-step burden-shifting approach that the courts apply to mergers under Section 7 of the Clayton Act. Based on my experience in the *AT&T/Time Warner* case, I identify a number of shortcomings of the 2020 Vertical Merger Guidelines.

Keywords Antitrust · Mergers · Vertical mergers · Input foreclosure

1 Introduction

The 2020 Vertical Merger Guidelines (“2020 Guidelines” or VMGs) are a major improvement over the 1984 Non-Horizontal Merger Guidelines that they replaced, which had become a “dead letter.” The topic that forms the centerpiece of the 2020 Guidelines—“Foreclosure and Raising Rivals’ Costs” (Section 4a), which is the most common theory of harm that has been explored by the U.S. Department of

This article may be found at <http://www.faculty.haas.berkeley.edu/shapiro/verticalmergers.pdf>.

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Justice (DOJ) and the Federal Trade Commission (FTC) in recent years in vertical merger cases—was entirely absent from the 1984 Guidelines. A large majority of the enforcement actions that are highlighted in the FTC’s Commentary on Vertical Merger Enforcement involve foreclosure and raising rivals’ costs. See Federal Trade Commission (2020).

This article offers a practical guide to analyzing vertical mergers that is based on the approach to input foreclosure and raising rivals’ costs that is described in the 2020 Vertical Merger Guidelines.¹ The step-by-step analysis that is described here draws lessons from how that theory of harm played out in the lone vertical merger case that has been litigated by the antitrust agencies in recent decades: the DOJ’s unsuccessful challenge to the merger between AT&T and Time Warner.² I testified as the DOJ’s economic expert in that case.³

The approach taken to input foreclosure in the 2020 Guidelines shares much in common with the approach that I took in the AT&T/Time Warner case. Inasmuch as that approach was roundly rejected by Senior Judge Leon, and his decision was upheld on appeal, that experience must serve as a warning about the difficulties that the antitrust agencies will face in future challenges to vertical mergers that are based on this core theory of harm. Of course, the analysis that was presented in the *AT&T/Time Warner* case was highly fact-specific, and the evidence in another case may prove to be much more favorable to the government. Still, the *AT&T/Time Warner* case can teach us a great deal about how to structure an input foreclosure inquiry to obtain the most accurate results and how best to present those results in court when necessary. The *AT&T/Time Warner* case also reveals a number of shortcomings of the 2020 Vertical Merger Guidelines.

¹ As is pointed out in the 2020 Guidelines, vertical mergers can also lead to distribution foreclosure, when the “related product” involves distribution rather than an input. With distribution foreclosure, the merged firm impedes the ability of its upstream rivals to reach downstream customers. See Example 5 in the 2020 Guidelines. Studying distribution foreclosure involves an analogous inquiry to the one that is developed in this article. This article does not address theories of harm associated with vertical mergers other than unilateral input foreclosure.

² *United States vs. AT&T Inc.*, 310 F. Supp. 3d 161 (DC District Court, June 2018) (henceforth, “District Court”) and *United States vs. AT&T, Inc.*, 916 F.3d 1029 (DC Circuit Court, February 2019) (henceforth, “Appeals Court”).

³ My expert testimony in the *AT&T/Time Warner* case was supported by Keith Waehrer and Nitin Dua at Bates White. I thank them while absolving them of any responsibility for the views that are expressed here. My expert report (“Shapiro Report”) is available at <https://www.justice.gov/atr/case-document/file/1081336/download>. My rebuttal expert report (“Shapiro Rebuttal Report”) is available at <https://www.justice.gov/atr/case-document/file/1081321/download>. Finding in favor of AT&T, District Court Senior Judge Leon sharply criticized my analysis. The Appeals Court recognized serious problems with Judge Leon’s decision. “Undoubtedly the district court made some problematic statements, which the government identifies and this court cannot ignore.” (Appeals Court at 1038) However, the Appeals Court did not find Judge Leon’s decision to be clearly erroneous. As explained by the Appeals Court: “This is a deferential standard. ... Findings that are *plausible* in light of the entire record are not clearly erroneous.” (Appeals Court at 1032, emphasis added).

2 Foreclosure and Raising Rivals' Costs

Section 4 in the 2020 Guidelines, “Unilateral Effects,” explains how a “vertical merger may diminish competition between one merging firm and rivals that trade with, or could trade with, the other merging firm.” The central theory of harm is developed in Section 4a, “Foreclosure and Raising Rivals’ Costs,” which begins with this explanation:

A vertical merger may diminish competition by allowing the merged firm to profitably use its control of the related product to weaken or remove the competitive constraint from one or more of its actual or potential rivals in the relevant market. For example, a merger may increase the vertically integrated firm’s incentive or ability to raise its rivals’ costs by increasing the price or lowering the quality of the related product. The merged firm could also refuse to supply rivals with the related products altogether (‘foreclosure’).

This article explains how to analyze whether a vertical merger will cause the vertically integrated firm to raise the price that it charges downstream rivals for an acquired input.⁴ In the language of the 2020 Guidelines, this involves “raising rivals’ costs” (RRC). For clarity, I reserve the term “total foreclosure” for a flat refusal to sell the input to downstream rivals, not merely raising the price of the input. I use the term “foreclosure” to encompass both RRC and total foreclosure.

The central ideas behind an inquiry into input foreclosure involve three steps, which can easily be described in non-technical terms. This inquiry can be qualitative or quantitative.

- First, one asks about the *ability* of the merged firm to weaken its rivals through input foreclosure. The key question here is whether the input being acquired is important to the downstream rivals, in the sense that their ability to compete would be meaningfully weakened if they were denied access to that input or faced higher prices for that input. This inquiry studies: (a) the extent to which downstream rivals have been using the input that is being acquired or are expected to need it in the future; and (b) how much their costs would go up, or quality go down, if they lacked access to that input or faced higher prices for it. The central economic question here is whether the downstream rivals have good substitutes for the input in question.
- Second, one asks about the *incentive* of the merged firm to weaken its rivals by raising the input price or denying them access to the input. The central question here is whether weakening these downstream rivals would enhance the profits of the merged firm due to diverted downstream sales. This inquiry includes two

⁴ Much of the analysis here assumes that the input is sold using linear pricing. A different analysis may apply if market participants generally use two-part tariffs or other nonlinear pricing schemes. The possibility of non-linear pricing is explicitly considered in Sect. 3 below as part of the analysis of whether the elimination of double marginalization is merger-specific.

more variables: the “diversion ratio” from the rivals to the merged firm; and the merged firm’s downstream price/cost margins.

- Third, one asks whether the merger will generate significant *efficiencies*, including those that are due to the “elimination of double marginalization” (EDM).

Figure 1 displays the elements of the analysis of vertical mergers in which the competition concern involves the RRC theory of harm, which is my focus here.⁵

Readers who are accustomed to studying horizontal mergers may wonder where market definition and market shares fit into this framework. The short answer is that market shares are less informative for studying vertical mergers than they are for studying horizontal mergers, so using market shares as a *screen* does not work well. The 2020 VMGs implicitly recognize this.

The implications of a large market share for the downstream merging firm are ambiguous. A merger that involves a firm with a larger downstream share tends to strengthen the RRC effect (due to higher downstream diversion to the merged firm), and naturally raises greater concerns about enhanced market power downstream. But a larger downstream share also tends to offer the potential for a larger EDM efficiency in cases where EDM is a cognizable efficiency.

What about the merged firm’s upstream share? A key issue in cases that involve input foreclosure is whether the downstream rivals have good alternatives to the acquired input. Inputs with higher upstream market shares tend to be more important to rivals, but defining an upstream market and measuring shares in that market may not be the best way to assess the importance of the acquired input. Worse yet, doing so can lead to false negatives. As discussed below, there often is a more direct way of evaluating the importance of the acquired input.

A. Application to the AT&T/Time Warner merger: theory.

The analysis in Section 4a of the 2020 Guidelines explains the theory that formed the basis for my testimony in the *AT&T/Time Warner* case. In particular, Example 3, “Raising the input costs of rivals with bargaining,” accurately describes the theory of harm that I presented in court.

In the *AT&T/Time Warner* case, the relevant product was the distribution of video content to households. AT&T, primarily through its DirecTV service, was a major distributor of video content to households throughout the United States. The “related product” was a popular collection of video content: the “Turner Content,” which was owned by Time Warner. Prior to the merger, Turner licensed its content to DirecTV and to DirecTV’s leading rivals, which are referred to as “multichannel video program distributors” (MVPDs). Some of the largest rival MVPDs were the cable companies Comcast and Charter and the Dish direct broadcast satellite

⁵ For a further discussion of these elements of the analysis of vertical mergers, including the treatment of other cognizable efficiencies, see Shapiro (2019).

service. My analysis also included “Virtual MVPDs” such as Dish Sling and Sony Vue.⁶

Figure 2 shows the elements from Fig. 1 as they arose in the *AT&T/Time Warner* merger.

The primary theory of harm advanced by the government was that the merged firm would raise the costs of rival MVPDs by charging them more for the Turner Content.⁷ Perhaps the simplest way of articulating the raising rivals’ cost theory of harm is as follows: Prior to the merger, when Turner licensed its content to an MVPD such as Dish, Turner incurred certain incremental costs, which influenced its pricing in the usual way.⁸ After the merger, the merged firm would bear an *additional* incremental cost of licensing the Turner Content to Dish (for example) because access to the Turner Content would enable Dish to win some subscribers from DirecTV. That additional incremental cost will cause the merged entity to raise the price it charges Dish for the Turner Content. The resulting higher price for Turner Content weakens Dish by raising its costs.

This theory was not novel. To the best of my knowledge, it was first applied in Rogerson (2003), who studied partial vertical integration between News Corporation (an owner of content) and DirecTV (an MVPD). The theory was developed much more extensively by the Federal Communications Commission (FCC) in the Comcast/NBCU transaction in 2011.⁹ For an excellent recent explanation of this theory and its application, see Rogerson (2020).¹⁰

This article explains how to quantify this RRC effect in an industry where input prices are set through bilateral bargaining. Quantification is a natural topic of interest for economists. To be clear, however, requiring the government to quantify the RRC effect in court in order to establish its *prima facie* case would lead to underenforcement of vertical mergers—given the very real challenges of doing so in a litigation setting.¹¹ Nonetheless, quantifying the RRC effect is desirable in cases where the data are available to do in a reliable manner. Fortunately, the necessary data are

⁶ Shapiro Report, p. 81.

⁷ I first tested to see if the merged firm would have an incentive to stop licensing the Turner Content to rival MVPDs, i.e. “foreclosure” in the language of the 2020 Guidelines. My calculations indicated that the merged entity would not have an incentive to foreclose Turner Content totally from MVPDs, so I focused my attention on RRC.

⁸ Advertising revenue that is earned by Turner acts like a negative marginal cost that is associated with incremental subscribers.

⁹ See Federal Communications Commission (2011), plus commentary by Baker (2011) and Rogerson (2014).

¹⁰ Rogerson (2020) refers to this theory as “bargaining leverage over rivals” (BLR). He distinguishes this from the older theory of raising rivals’ costs that is due to Salop and Scheffman (1983), which studies the incentive of the merged firm unilaterally to raise the input price “because it recognizes that increasing the input price it charges to downstream rivals will raise these rivals’ costs in the downstream game.” (p. 408) While I agree with Rogerson about this theoretical distinction, I apply the more commonly-used RRC label to what he calls BLR.

¹¹ The Appeals Court in the *AT&T/Time Warner* case made it clear that the government is not required to quantify anti-competitive effects in order to prevail. “Preliminarily, the court does not hold that quantitative evidence of price increase is required in order to prevail on a Sect. 7 challenge.” Appeals Court at 1045. See Sect. 4.C below.

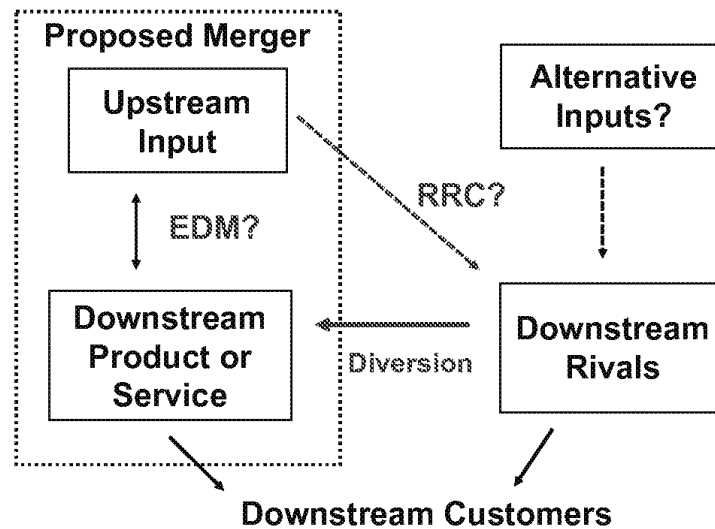


Fig. 1 Elements of raising rivals' costs analysis

not overly extensive—at least if one is prepared to make some simplifying assumptions, notably by performing the necessary calculations with downstream prices taken as fixed at their pre-merger levels.¹² The analysis presented here will surely be valuable during the investigative phase of vertical mergers—notwithstanding the added challenge of presenting these ideas effectively in a courtroom setting.

Here is the basic economic logic. Prior to the merger, Dish licenses the Turner Content. Denote by N the (fixed) number of Dish subscribers. Suppose Dish would lose a share L of those subscribers if Dish did *not* have access to the Turner Content. We refer to L as the “Turner Subscriber Loss Rate” at Dish.¹³ Denote by D the share of those lost subscribers who would switch to DirecTV. We refer to D as the “DirecTV Diversion Ratio” at Dish.¹⁴ Denote by M the (fixed) margin between price and marginal cost for DirecTV subscribers. We refer to M as the “DirecTV Margin,” which was measured on a per-subscriber, per-month (PSPM) basis.¹⁵

The profits that are lost at DirecTV as a result of Dish having access to the Turner Content are thus given by $N * L * D * M$. We can divide this amount by N to convert it into a per-subscriber opportunity cost to the merged firm of licensing the Turner Content to a Rival MVPD, which is equal to

¹² Below I discuss how the analysis would be modified if one sought to predict how the merger would change both upstream and downstream prices based on a full merger simulation at both levels. As explained in Rogerson (2020), the formula for RRC developed below applies in a merger simulation model if prices at both levels are set simultaneously, but then one must use the equilibrium values of the variables, not their pre-merger values. Rogerson (2020, Sect. 6) shows that the analysis becomes far more complex in a sequential model in which upstream prices are set first, with the bargaining parties accounting for their influence on downstream prices and quantities.

¹³ See Shapiro Report, Sect. 8.1, p. 50.

¹⁴ See Shapiro Report, Sect. 8.2, p. 56.

¹⁵ See Shapiro Report, Sect. 8.3, p. 58.

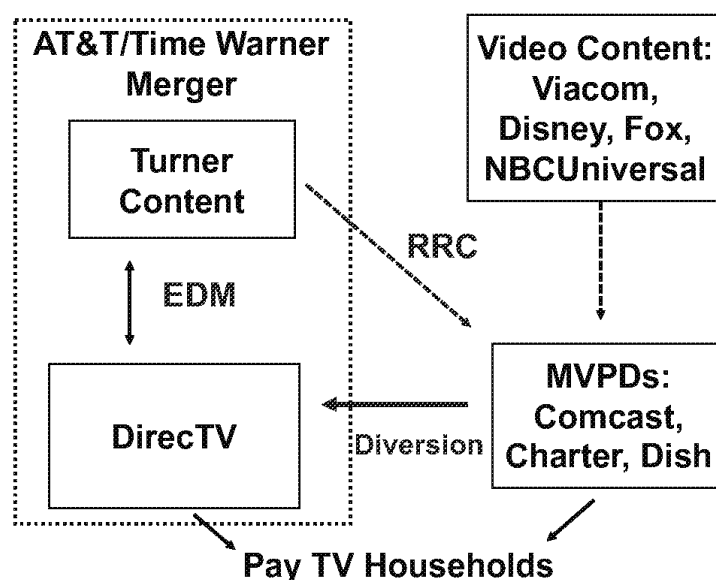


Fig. 2 Elements of AT&T/Time Warner analysis

$$\text{Per - Subscriber Opportunity Cost to Merged Firm} = L * D * M.$$

This opportunity cost is the product of three variables, each of which can be estimated using available documents and data: (1) the Turner Subscriber Loss Rate at the Rival MVPD; (2) the DirecTV Diversion Ratio at the Rival MVPD; and (3) the DirecTV Margin.¹⁶ The first two of these variables will typically vary across rivals, but the third will not. In the *AT&T/Time Warner* case, due to data limitations I assumed that the Turner Subscriber Loss Rate was uniform across Rival MVPDs. So only the DirecTV Diversion Ratio varied across Rival MVPDs. I assumed that Diversion Ratios were proportional to local shares of MVPD subscribers. As a result, the RRC effect was larger in geographic areas where DirecTV had a larger market share and larger for Rival MVPDs that themselves had larger market shares.

The remaining variable needed to quantify how much the merger would raise rivals' costs is the rate at which these higher costs associated with licensing the Turner Content would be passed through to higher licensing fees paid by MVPDs for the Turner Content. In this industry, license fees are set through intricate bilateral negotiations. I utilized a split-the-difference bargaining model, which implies that the rate negotiated between Turner and Rival MVPDs for the Turner Content would go up by half as much as the increase in Turner's opportunity costs.¹⁷ I offered both

¹⁶ The FCC took this same approach in analyzing the Comcast/NBCU transaction. Federal Communications Commission (2011, p. 156) displays this same expression for the increase in the opportunity cost to the merged firm of licensing its content to a rival MVPD. Rogerson (2020) also provides a derivation of this formula and discusses its application in Comcast/NBCU.

¹⁷ The analysis can be done using other parameters for how the gains from trade are split. Murphy (2010) empirically estimated that split in his analysis of the Comcast/NBCU merger. Crawford and Yurukoglu (2012, p. 673) also estimate the split in this industry; they find that the split is usually between 0.25 and 0.75.

a theoretical and an empirical basis for assuming that the gains from trade would be split equally.¹⁸

Applying a split-the-difference bargaining model, the increase in the cost of licensing the Turner Content to a Rival MVPD is equal to $L * D * M/2$ per subscriber per month. This cost increase was not uniform across Rival MVPDs, because the DirecTV Diversion Ratio, D , varied from one MVPD to another. This model generated predictions for how much the merger would raise each Rival MVPD's costs, taking downstream prices as given. Further analysis was required to estimate the effect of these higher MVPD costs on Pay TV Households. See Sect. 4 below.

In this industry, bargaining impasses can and do lead to temporary blackouts, but these rarely last long. This is similar to union strikes in a labor context, which are usually temporary. In the video industry, the impact of a blackout varies over time in a manner that is very different for the content provider than for the MVPD. The immediate impact of a blackout is that the content provider loses licensing fees and advertising revenue from subscribers who continue to use the MVPD despite the blackout, while the MVPD loses revenue from subscribers who drop its service. In some situations, the content provider can strategically time the start of the blackout to coincide with programming that many consumers are keen to watch—such as a major sports event—and announce the impending blackout in advance to induce subscribers to switch to another MVPD. Over time, as more subscribers drop the MVPD's service in response to the blackout (or fail to sign up for it), the MVPD's losses mount while the content provider's audience size is partially restored as other MVPDs gain subscribers from the blacked-out MVPD.

These asymmetric dynamics make it important to consider the *timing* of negotiations and the duration of threatened blackouts for the purpose of measuring the Turner Subscriber Loss Rate. The simple logic that was presented above—which yields the $L * D * M/2$ expression—applies if Turner and Dish (say) engage in *once-and-for-all* split-the-difference bargaining, with the threat points being a permanent blackout of the Turner Content on Dish. In that case, the Turner Subscriber Loss Rate that we need to measure is the one that would be associated with a *permanent* blackout.

My testimony was indeed based on measuring the Turner Subscriber Loss Rate that would be associated with a permanent blackout. Importantly, I was able to show that this method is theoretically correct—even though in the real world Turner and the MVPDs bargain repeatedly through time, not once-and-for-all. There are two ways to see why. The first is theoretically more attractive, at least to purists, but I thought that the second might be more clearly connected to split-the-difference bargaining and easier to explain in court.¹⁹

First, Rubinstein (1982) provided conditions under which the Nash Bargaining outcome is the unique subgame perfect equilibrium in a game in which the two parties make alternating, take-it-or-leave-it offers. Coles and Muthoo (2003) extended his result to cases with time-varying payoffs. They prove that in an alternating-move

¹⁸ Shapiro Report, p. 42. I also performed sensitivity analysis on this bargaining-skill parameter.

¹⁹ In this setting, there is no difference between split-the-difference bargaining and Nash Bargaining.

bargaining game, as the time interval between offers goes to zero, the unique subgame perfect Nash Equilibrium gives each party a payoff that is equal to the payoff that the party gets in the one-shot Nash Bargaining game where each party's disagreement payoff is the present discounted value of that party's payoff if the parties never agree.

Second, to see what happens if the parties actually bargain repeatedly over time, consider the concept of *recursive Nash Bargaining*. Under recursive Nash Bargaining, when the two parties engage in Nash Bargaining on any given day, they recognize that if they disagree one day, they will meet again at the bargaining table the next day.²⁰ With recursive Nash Bargaining, a party's disagreement payoff in any given period is equal to that party's flow payoff from disagreement plus the (discounted) value of that party's payoff from bargaining next period. The "Appendix" shows that the payoffs under recursive Nash Bargaining, as the time interval between bargaining sessions goes to zero, are equal to the payoffs from once-and-for-all Nash Bargaining.

In the courtroom, my analysis was not based on the assumption that Turner and a rival MVPD would have only one chance to reach an agreement. Instead, it was based on the assumption that they bargain over time. They anticipate both the short-term effects of a temporary blackout and how their bargaining leverage would change following any temporary blackout. I showed that the proper variable to use to measure the importance of the Turner Content was that Turner Subscriber Loss Rate that would be associated with a permanent blackout of Turner Content.

Once one thinks in terms of repeated bargaining, it becomes all too clear just how flawed was Judge Leon's notion (see below) that a blackout threat by Turner would be "incredible" because a permanent blackout would be very costly for Turner. Neither party's "threat" during any one period is to walk away from the table forever and cause a permanent blackout. Instead, its threat is to stay tough "today" and then come back to bargain again "tomorrow." The cost to any one party of not agreeing today is only its share of *one day* of lost gains from trade.

All of this fits nicely with the 2020 VMGs. Section 4a in the 2020 Guidelines uses the language of "ability" and "incentive" to articulate this basic theory of RRC. The Guidelines ask whether the merged firm will have the ability and incentive to weaken its downstream rivals through foreclosure or raising rivals' costs. The "ability" prong asks whether rivals will lose significant sales if they are unable to purchase the acquired input; that corresponds to the variable L in my analysis. The "incentive" prong involves the variables D and M as well as L , because all three influence the merged firm's newfound bargaining leverage.

B. District court rejection of basic antitrust economics and law.

AT&T attacked this basic theory in two distinct ways. First, they boldly argued that the merger would not increase Turner's bargaining leverage because any impact on

²⁰ Yu and Waehrer (2019) use a similar concept of recursive equilibrium that involves multiple bargaining dyads.

DirecTV of a Turner blackout at a Rival MVPD would not be taken into consideration by the Turner executives who were negotiating carriage agreements with those MVPDs. Judge Leon credited this argument. Relying on the testimony of executives at vertically integrated firms, he concluded that “vertically integrated corporations have previously determined that the best way to increase company wide profits is for the programming and distribution components to separately maximize their respective revenues.”²¹ Put simply, Turner would leave money on the table by not taking advantage of the increased bargaining leverage that it would gain as a result of the merger.

At this point, Senior Judge Leon departed from the standard working assumption of antitrust economists that for-profit firms will be operated to maximize the profits of the firm as a whole. I consider this assumption fundamental and indispensable to antitrust economics, as it forms the basis for evaluating economic incentives. More important in a litigation context, antitrust *law* presumes that “a business with multiple divisions will seek to maximize its total profits.” In particular: “Companies with multiple divisions must be viewed as a single actor, and each division will act to pursue the common interests of the whole corporation.”²² Judge Leon did not properly respect this fundamental precept of antitrust law.

Especially helpful to AT&T in achieving this result was the self-serving testimony from NBC/Universal and Turner executives who asserted that they had not gained any bargaining leverage as a result of their previous vertical mergers. As explained by the Appeals Court: “The district court also credited the testimony of several industry executives—e.g., Madison Bond, lead negotiator for NBCU, and Coleman Breland and Richard Warren, lead negotiators for Turner Broadcasting, that vertical integration had not affected their affiliate negotiations in the past. By contrast, the testimony from third-party competitors that the merger would increase Turner Broadcasting’s bargaining leverage was, the district court found, ‘speculative, based on unproven assumptions, or unsupported.’”²³

Because the Appeals Court did not find Judge Leon’s opinion here to be clearly erroneous, we are left with a very worrisome line of reasoning. Evidently, two companies that engage in a vertical merger can argue that any anti-competitive effects will not arise because the merged firm will choose to operate the two merging companies as though they were still independent. Presumably, the lawyers making this argument will support it by eliciting testimony to this effect from the company’s own executives.²⁴

What will now happen when this same argument is made in the context of a horizontal merger? Will the courts accept that anticompetitive effects will not arise

²¹ District Court at 222-23.

²² Appeals Court at 1043, citing *Copperweld Corp. versus. Independence Tube Corp.* 467 U.S. 752 at 770 (1984).

²³ Appeals Court at 1037.

²⁴ In a similar fashion, in the *T-Mobile/Sprint* merger, T-Mobile executives testified that they would continue to compete vigorously, even after eliminating Sprint as an independent company and thus achieving a much larger market share, because that was their corporate culture. The judge in that case was swayed by that testimony. I testified on behalf of the states that unsuccessfully challenged that merger.

because the parent company will instruct the two merging companies to compete as if they were still independent? Furthermore, Judge Leon was flatly inconsistent in his treatment of the merged entity. He brushed aside RRC by assuming that each of Turner and DirecTV would maximize their own profits, but did not then dismiss EDM for the very same reason. Why that was not a clear error in logic eludes me.

C. District court rejection of basic bargaining theory.

AT&T also challenged the validity and applicability of the basic theory of bargaining that is described above and is now clearly articulated in the 2020 Vertical Merger Guidelines. The complete absence of the basic RRC theory of harm from the 1984 Non-Horizontal Merger Guidelines surely made it easier for AT&T's unprincipled attack to succeed. This absence was especially unfortunate given the lack of any case law on vertical mergers in recent decades.

At trial, AT&T's lawyers and executives mocked the basic bargaining theory that I used as detached from reality. They insisted that when the post-merger AT&T would be bargaining with rival MVPDs over the licensing of the Turner Content, any resulting effect on DirecTV would have no influence on the negotiated rates, because Turner would still benefit by licensing its content to Rival MVPDs. This argument amounts to rejecting the RRC theory of harm in cases where total foreclosure is unprofitable. Inasmuch as RRC is often profitable when total foreclosure is not, accepting AT&T's argument on this point would greatly narrow vertical merger enforcement, with no valid basis. Yet that is precisely what Judge Leon did.

After emphasizing that I was not predicting that Turner would actually benefit from a blackout after the merger, Judge Leon stated:

In view of that evidence on the prospects of a long-term blackout, the lynchpin of Professor Shapiro's testimony (and, accordingly the Government's increased-leverage theory) is the assumption that a post-merger Turner would gain increased leverage by wielding a blackout threat that will only be somewhat less incredible. *That does not make sense as a matter of logic* and, more importantly, that has not been supported by sufficient real-world evidence. [Footnote:] The Court finds Time Warner CEO Jeff Bewkes' response to a question regarding the increased-leverage theory to be particularly persuasive: "And the way I—I think it's best the way to understand it, is if we have a risk that a thousand pound weight might fall on us—we hope it doesn't, but if that's always there, then if you said to me, well, don't worry; it might be a 950-pound weight instead of a thousand pounds, are you going to think about it differently, feel differently? Are you going to take more risk that any of that might happen to you? Absolutely not." Tr. 3120:23–3121:7 [Bewkes (Time Warner)].²⁵

²⁵ District Court at 224, emphasis added. "Witnesses such as a Turner Broadcasting president Coleman Breland, AT&T executive John Stankey, and Time Warner CEO Jeff Bewkes, whom the district court credited, testified that after the merger blackouts would remain too costly to risk and that any change in that cost would not affect negotiations as the government's theory predicted." Appeal Court at 1041. Having looked at real-world evidence with regard to carriage negotiations, not to mention the fact that

Judge Leon was convinced that a party gains no negotiating leverage if its fall-back position improves, so long as there are significant gains from trade. As a matter of logic, I beg to differ.

AT&T's ability successfully to challenge this basic theory was especially brazen, as well as plainly opportunistic and inconsistent, given that DirecTV itself had put forward this theory in 2010 in objecting to the Comcast/NBCU merger and AT&T itself had put forward this theory in comments to the FCC with regard to its program access rules.²⁶ The Appeals Court stated:

During licensing and rulemaking proceedings before the FCC, DirecTV stated 'a standard economic model' (i.e., the Nash bargaining theory) predicts that the proposed Comcast-NBCU merger 'would significantly increase the prices other MVPDs pay for NBCU programming,' and two years later stated, similar to AT&T Inc. comments, that 'vertically integrated MVPDs have an incentive to charge higher license fees for programming that is particularly effective in gaining MVPD subscribers than do non-vertically integrated MVPDs'.²⁷

Oddly, presented with these prior filings, Judge Leon stated: "When AT&T and DirecTV made many of the proffered regulatory filings, they acted as competitors to (or customers of) distributors whose competitive positions would be affected by FCC review. For that reason alone, I am hesitant to assign any significant evidentiary value to those prior regulatory filings."²⁸ As the Appeals Court pointed out "FCC rules require all regulated parties ... to provide only '[t]ruthful and accurate statements to the Commission' in adjudicatory proceedings."²⁹ There is little hope for effective antitrust enforcement if the executives of large companies can contradict prior statements their companies made to regulators and face no meaningful repercussions.

Complementing the testimony of AT&T's executives, AT&T's chief economic expert witness, Professor Dennis Carlton, asserted that the bargaining model that I employed was "theoretically unsound," despite the fact that it was a simple application of standard bargaining theory which reflected two familiar concepts from Econ 101: opportunity cost and the pass-through of higher costs to higher prices.³⁰ Hopefully, such a brazen litigation strategy will no longer be able to succeed, now that the 2020 Vertical Merger Guidelines have been issued.³¹

Footnote 25 (continued)

very costly temporary blackouts sometimes occur, I find the notion that "blackouts would remain too costly to risk" to be economically incoherent.

²⁶ See especially Murphy (2010), who developed the RRC theory in a bargaining context on behalf of DirecTV. AT&T fought vigorously to exclude Murphy's prior testimony from the proceeding.

²⁷ Appeals Court 1041–42. The Appeals Court cited comments by DirecTV and AT&T at the FCC in the Comcast/NBCU merger (2010) and regarding the FCC's Program Access Rules (2012).

²⁸ District Court at 205–206.

²⁹ Appeals Court at 1042.

³⁰ "Professor Shapiro's model, the one he explained yesterday, is just theoretically unsound." AT&T/Time Warner Trial Transcript at 2442 (Carlton).

³¹ When horizontal mergers are challenged in court, both the government and the merging parties consistently accept and employ the HMGs and argue that they should win if those Guidelines are properly applied to the case at hand. See Shapiro and Shelanski (2021).

D. Empirical implementation in the AT&T/Time Warner case.

I now discuss some of the practical challenges that the government will face in litigation in attempting to measure by how much a proposed vertical merger will raise rivals' costs. Based on my experience in the *AT&T/Time Warner* case, I believe that these challenges will be substantial in many litigated cases. The agencies' much more extensive experience litigating *horizontal* mergers further supports this view. While the DOJ and the FTC often win when they challenge horizontal mergers, those victories are typically achieved in significant large part by measuring market shares and establishing the structural presumption—and not just by quantifying unilateral effects or proving coordinated effects independently of market structure.³²

In the *AT&T/Time Warner* case, as explained above, the predicted cost increase for a rival MVPD was equal to $L * D * M/2$. A significant portion of my testimony involved estimating the likely values for these three variables: L , D , and M . AT&T vigorously disputed my estimate of each of the three variables, as well as the 50 percent passthrough rate that embedded in this expression. AT&T was able to convince Judge Leon that my estimates were not sufficiently reliable to support the DOJ's challenge to the merger. While the specifics of that back-and-forth are not of general interest, I believe some lessons do emerge for future cases. Those lessons are my focus below.

1. How important is the input being acquired?

The 2020 Vertical Merger Guidelines ask whether “By altering the terms by which it provides a related product to one or more of its rivals, the merged firm would likely be able to cause those rivals (a) to lose significant sales in the relevant market.”³³ In the *AT&T/Time Warner* case, answering this question involved measuring the Turner Subscriber Loss Rate, L .

In some cases, we will observe some downstream rivals that do not use the input that is being acquired. In those cases, one can ask how those rivals have fared and whether the lack of that input has significantly weakened them as competitors. The defense will point to any successful rivals that do not use the input in question. The strongest cases for the government will arise when all major rivals *do* use the input that is being acquired. That was true in the *AT&T/Time Warner* case. All major MVPDs licensed the Turner Content and made it available to the vast majority of their subscribers, and there was no comparable package of content that MVPDs could add to soften the blow if they lost Turner Content. This was a strong point in the government's case.

In cases where all of the major rivals use the input that is being acquired and have done so for years, how can the government measure the impact on these rivals of losing access to that input? The natural place to look for such evidence is in the contemporaneous documents of the downstream rivals and the downstream merging

³² See Hovenkamp and Shapiro (2019).

³³ 2020 Vertical Merger Guidelines, p. 4.

firm to see how they viewed the (unobserved) consequences of losing access to the input in question. Downstream firms may well create such documents during their negotiations to purchase the input in question. This is what I did in the *AT&T/Time Warner* case. However, AT&T was successful in calling into question the reliability of a study that was conducted for Charter, one of DirecTV's rivals, that I relied upon to quantify the Turner Subscriber Loss Rate. One also can look at the documents of the upstream merging party to see how the input owner viewed its own bargaining leverage in negotiations with downstream firms.

Another approach to estimating the impact on downstream rivals of losing access to the input that is being acquired, in cases where all major rivals use that input, is to examine how those rivals were affected by the loss of access to a *similar* input, if one exists. I also took this approach in the *AT&T/Time Warner* case by looking at an episode where an MVPD (Suddenlink) had lost access to content that was provided by Viacom. That episode underestimated the Turner Subscriber Loss Rate because the evidence indicated that the Turner Content was more important to subscribers than was the Viacom Content. However, AT&T was again successful at convincing Judge Leon that evidence from the Suddenlink/Viacom blackout did not support the Turner Subscriber Loss Rate that I was using. I expect that such evidentiary challenges will arise in future cases as well.

The *AT&T/Time Warner* case nicely illustrates why measuring the upstream "share" of the acquired input often will be of little value in cases that involve input foreclosure. As explained above, the importance of the Turner Content was best evaluated by estimating the Turner Subscriber Loss Rate. Yet AT&T's economic expert (Dennis Carlton) argued otherwise. He observed that Pay TV Households watch many shows other than the Turner Content and stated³⁴:

Plaintiff's theory of harm is based on a claim that a programmer that accounts for only about 6.4% of television video content consumption can be used to substantially harm competition in video distribution markets (Carlton Report, 53).

Unless a firm controls a substantial share of the capacity for producing video content (or of the existing stock of relevant content), any attempt to limit access to content in an attempt to harm competition in distribution markets is likely to cause distributors to turn to other content producers (Carlton Report, 55).

The universe of "television video content consumption" that Carlton used to assign a 6.4% share to the Turner Content included a wide range of highly diverse content. The low Turner share using this metric reflects the fact that households value having the ability to watch many different channels. Indeed, that is the primary appeal of the large packages of programming that are offered by MVPDs.

³⁴ Shapiro Rebuttal Report, p. 8, providing quotes and citations to the Carlton Report. The Shapiro Rebuttal Report (p. 9) develops an example that involves Spotify and "must-have" music labels to show how using "play shares" as a measure of the market power of content providers is highly misleading when "must-have" content is involved.

Furthermore, the idea that a blackout of Turner Content would “cause distributors to turn to other content producers” is nonsensical in this setting because the major MVPDs generally carry all of the leading content packages. They cannot “turn to other content providers” to make up for the loss of the Turner Content.

I strongly disagree with Carlton that the 6.4% share he calculated is informative, much less that it implies that the Turner Content was unimportant to MVPDs. The Turner Subscriber Loss Rate is clearly a much better metric for assessing the competitive significance of the Turner Content. Carlton’s 6.4% share of video consumption for Turner is quite consistent with a Turner Subscriber Loss Rate of around 10%: the figure that I was using.³⁵ This requires only that 10% of subscribers find it worthwhile to switch to another MVPD to restore their access to the missing Turner Content. There was abundant evidence that the Turner Content was unique and highly valued by many households, including evidence of what MVPDs paid for the Turner Content. The fact that households also watched a great deal of other content was beside the point.

2. Diversion from the downstream rival to the merged firm.

The 2020 VMGs state: “The merged firm, as a result of the merger, would likely find it profitable to foreclose rivals, or offer inferior terms for the related product, because it benefits significantly in the relevant market when rivals lose sales or alter their behavior in response to the foreclosure or to the inferior terms.”³⁶

A key factual issue is just how much the merged firm benefits when rivals lose sales as a result of paying more for the input that is being acquired or losing access to that input entirely. This analysis naturally breaks into two parts: (1) how many of those lost sales would be captured by the merged firm; and (2) what profits the merged firm would earn on those incremental sales. These two parts correspond to the applicable Diversion Ratio, D , and Price/Cost Margin, M . Unfortunately, the 2020 Guidelines do not identify these key variables to be measured. These are familiar objects from the HMGs. I now address these two elements.

For any given downstream rival, one can ask what alternatives its customers would turn to if they switched suppliers in response to their supplier’s losing access to the input that is being acquired. This type of evaluation of next-best alternatives for customers is familiar from horizontal merger analysis. Again, direct evidence of customer responses to input foreclosure will be hard to find if all significant rivals use the acquired input—the fact pattern under which the proposed vertical merger is most likely to harm competition. But one can look more generally at customer switching patterns, or one can base Diversion Ratios on downstream market shares.

³⁵ Shapiro Report, p. 55. In an industry where distributors are aggregating content for consumers, the “Power Ratio” is an important measure that is associated with a collection of content. The Power Ratio is the ratio of the subscriber loss rate associated with that content to the share of viewing or listening that is accounted for by that content.

³⁶ 2020 Vertical Merger Guidelines, p. 5.

In the *AT&T/Time Warner* case, I used market shares in local MVPD markets to derive Diversion Ratios from Rival MVPDs to DirecTV.³⁷ These estimates included some diversion to an outside good. Pushing for lower Diversion Ratios, AT&T argued that there would be more substitution to the outside good than I estimated.³⁸ Judge Leon was receptive to that argument as well.

3. Downstream price/cost margins.

Measuring downstream price/cost margins is conceptually straightforward but can be intricate in practice. As with Diversion Ratios, we have a great deal of experience measuring price/cost margins in the context of horizontal merger analysis.

In the *AT&T/Time Warner* case, AT&T erected many obstacles to the DOJ's efforts to obtain reliable and up-to-date measures of DirecTV's price/cost margins, both during the investigative phase and during the litigation phase. As a result, I was forced to rely on certain AT&T documents to measure margins, which AT&T then challenged as inaccurate and out of date. The only general lesson I am able to take away from this particular experience is that the government needs to be assertive during both the investigative and the litigation phases in compelling the merging parties to provide timely and accurate information about the key variables needed to quantify RRC, including price/cost margins.

4. Accounting for existing contracts.

All of this analysis applies when the merged entity is negotiating with a Rival MVPD over the terms on which the Turner Content will be available to that MVPD. In reality, those negotiations would arise only at some point in the future, because Rivals MVPDs had already entered into carriage agreements with Turner with various durations. Turner would have the ability to set higher prices for these MVPDs only over time, as their contracts expired and were renegotiated.

My model of carriage negotiations between Turner and Rival MVPDs abstracted away from Turner's existing carriage agreements. I pointed out that Turner's

³⁷ In measuring the market shares of the various MVPDs, there were some complications that arose from the fact that market shares varied by geography, and because AT&T also owned another distribution service, U-verse, which was available only in some geographies. Still, measuring market shares was not an especially complex exercise, and certainly not a novel one. Market shares are often used as proxies for Diversion Ratios in horizontal mergers, and the corresponding logit model of demand with an outside good is a workhorse in that setting.

³⁸ This debate involved the issue of how many customers would drop MVPD service entirely in response to a Turner blackout. I relied on analysis done by Charter to obtain a value for diversion to the Outside Good. Shapiro Report p.145. I used a share for the Outside Good of around 10%. Shapiro Report p. 67. I explained that diversion to the Outside Good in response to a blackout of Turner Content would be small because customers who dropped their MVPD in response to a blackout of Turner Content would be strongly inclined to switch to another MVPD so as to maintain access to the Turner Content. I consider that a very strong point notwithstanding that in recent years an increasing number of households have been "cutting the cord" and dropping MVPD service entirely, which was AT&T's and Carlton's main point. Cord cutters have revealed that they do not highly value the Turner Content.

post-merger incentives to raise price would tend to be manifest in non-price forms, given the inevitable incompleteness of the existing contracts.³⁹ I also pointed out that, in present value terms, the lack of harm for a year or two would not change my conclusions about overall harm to consumers, even after taking into account the short-run benefits that would arise from EDM.

AT&T criticized me for abstracting away from Turner's existing carriage contracts with Rival MVPDs. Judge Leon agreed, writing: "I conclude that the model's predictions of harm are not 'sufficiently probable and imminent' to be probative in view of the facts of this case."⁴⁰ The Appeals Court likewise stated: "Whatever errors the district court may have made in evaluating the inputs for Professor Shapiro's quantitative model, the model did not take into account long-term contracts, which would constrain Turner Broadcasting's ability to raise content prices for distributors."⁴¹

As a general rule, it seems short-sighted to approve mergers that will lessen competition and harm customers after current contracts expire, just because one cannot demonstrate customer harm until then. However, courts are naturally interested in the real-world effects of a proposed merger, and existing contracts often are a feature of the real world. This tension strikes me as a major challenge for effective merger enforcement, especially because merging parties will not be shy about strategically entering into contracts to undermine the ability of the government to challenge their merger. This problem applies with equal or greater force to horizontal mergers.⁴²

The challenge that is created by existing long-term contracts with customers is especially acute for vertical mergers where EDM is credited as merger-specific. For those mergers, the presence of long-term contracts that protect downstream rivals will reduce the near-term RRC effects, but those contracts need not similarly reduce the near-term EDM effects. Unfortunately, the 2020 VMGs are silent on how to treat existing long-term contracts.

One solution is for the courts to interpret Section 7 of the Clayton Act as prohibiting mergers that reduce competition, even if customers are protected from that reduction in competition for some period of time. Under this natural and plain reading of the statute, mergers that "may substantially lessen competition" would be illegal, abstracting away from extant contracts that temporarily protect customers from that loss of competition. That is what my model did. However, the courts in the *AT&T/Time Warner* case did not welcome that approach.⁴³

³⁹ I was not able to quantify these non-price RRC effects. This observation should serve as a reminder of the difficulties of quantifying harms to competition that arise from vertical mergers, even when they may be substantial.

⁴⁰ District Court at 240–241.

⁴¹ Appeals Court at 1046.

⁴² Signing up customers under multi-year contracts is a well-known strategy that is used by firms that seek to consummate a horizontal merger. This strategy can serve two functions, neither of which serves the public interest: (1) removing a customer as a witness for the government; and (2) weakening the government's ability to demonstrate harm to customers, and especially to quantify harm to customers, even if the merger likely will lessen competition.

⁴³ This is a good example of how the "consumer welfare standard" has been distorted by the courts in a manner that undermines effective antitrust enforcement. I have called for instead applying the "protecting competition standard" to emphasize that while demonstrating harm to customers based on reduced com-

5. Summary and next steps.

Based on this analysis, I concluded that the merger would cause an increase in the price of Turner Content of \$1.00 per subscriber per month, taking a weighted average across all rival MVPDs. That represented an 18.4 percent price increase for the Turner Content. I estimated that this price increase would raise rivals' costs by \$731 million per year in the aggregate.⁴⁴

Even in cases where one can quantify RRC, as I did in the *AT&T/Time Warner* case, one must recognize that such measurements do not and cannot fully incorporate longer-term harms to rivals. In general, as rivals' costs go up and their sales decline, their profits will fall, which will make future investments less attractive.⁴⁵ For this reason, the longer-term exclusionary effects of a vertical merger can be greater than the short-term effects.⁴⁶ Furthermore, my bargaining model did not account for other ways in which the merger would raise the costs of Rival MVPDs.⁴⁷

3 Accounting for the Elimination of Double Marginalization

The natural next question to ask is how the merger would affect *downstream customers*. The 2020 VMGs evaluate input foreclosure concerns based on their impact on downstream customers. I followed that approach in the *AT&T/Time Warner* case. I believe there is a consensus that this is the proper way to evaluate vertical mergers.⁴⁸ In general, evaluating the effect of the merger on downstream customers requires two additional steps of analysis.⁴⁹

First, one must consider and account for the possibility that the merger will cause the merged firm to lower its own downstream price due to the elimination of double

Footnote 43 (continued)

petition is a sufficient condition for finding a lessening of competition, it is not necessary. Harm to the competitive process should be sufficient in some circumstances. See Shapiro (2018, 2021).

⁴⁴ Shapiro Rebuttal Report, Fig. 9, p. 55.

⁴⁵ See Slaughter (2020). Quantifying these longer-term effects will typically be very difficult if not impossible.

⁴⁶ In forecasting over a longer period of time, the downstream rivals may also have more options for developing alternatives to the input that is being acquired. That is very much a factual issue that will vary across cases.

⁴⁷ The Shapiro Report, Sect. 7.5, offers two additional incentives for the merged firm to raise the fees that are charged to Rival MVPDs for the Turner Content. The first is caused by the diversion from the Rival MVPD to DirecTV when the rival raises its downstream prices in response to the higher fees charged by Turner. The second is that my model underestimates Turner's negotiating leverage by not accounting for the higher fees that a Rival MVPD will pay to *other* content providers in the event of a Turner blackout by virtue of becoming more dependent on their content.

⁴⁸ Rogerson (2020, p. 425), for example, states that downstream prices are "what we are ultimately interested in when we evaluate the welfare impact of vertical merger".

⁴⁹ The type of vertical merger that is discussed in this article will predictably raise rivals' costs, at least to some degree. However, if the merger's impact on competition is evaluated based how it affects downstream customers, that finding is not sufficient to conclude that the merger will harm competition.

marginalization. This Sect. 3 addresses the treatment of EDM.⁵⁰ In the *AT&T/Time Warner* case, EDM would give the merged firm an incentive to lower the price that DirecTV charges Pay TV Households. Second, if possible, one would like then to combine the estimates of RRC and EDM to predict the effects of the merger on the prices that are charged to downstream customers by the merged firm and by its downstream rivals.⁵¹ However, as noted above, quantification may not be possible and is not required. Section 4 below discusses how to evaluate the RRC and EDM effects together.

A. EDM and the post-merger maximization of combined profits.

The elimination of double marginalization is a well-known economic aspect of vertical mergers. One good way to think about EDM is to recognize that, after the merger, starting from pre-merger prices, the merged entity will have a new incentive to lower its downstream price, to the extent that the extra customers that are attracted by that lower price generate extra profits for the upstream operations of the merged firm. This incentive arises because the merger *internalizes the positive pecuniary externality* between the two merging firms that is associated with attracting more downstream customers. Section 6 in the 2020 Guidelines, “Procompetitive Effects,” recognizes this, stating: “The elimination of double marginalization is not a production, research and development, or procurement efficiency; it arises directly from the alignment of economic incentives between the merging firms.”

Of course, EDM applies only to sales by the downstream merging firm that use the input from the upstream merging firm. In so-called “diagonal” mergers, there are no such sales, and hence no EDM that is based on pre-merger trading patterns. Atalay et al. (2014) find that the upstream and downstream divisions of vertically integrated firms often do not trade with each other. The first step in analyzing EDM is to determine whether such trading is likely to take place after the merger. The analysis in this section applies only if such trading will predictably take place.

As the 2020 Guidelines recognize, EDM is different from other claimed merger synergies because a vertical merger inherently gives the merged firm an incentive to set its downstream prices on the basis of the merged firm’s combined upstream and downstream profits. Put differently, EDM follows logically from the normal and essential working assumption of antitrust economists that for-profit firms are run to maximize their overall profits.⁵² This is directly analogous to our normal working assumption that a horizontal merger eliminates competition between the merging parties and typically creates at least some upward pricing pressure. The difference is that a horizontal merger internalizes a *negative* pecuniary externality that

⁵⁰ The evaluation of cognizable efficiencies other than EDM is beyond the scope of this article.

⁵¹ I believe there is a consensus that this type of modeling is desirable when it is feasible and can be done in a reliable manner. Rogerson (2020, p. 413), for example, states that “a full assessment of the welfare impact of a vertical merger requires one to assess the net impact of both effects [RRC and EDM] in a single model”.

⁵² As noted above, antitrust law also makes this presumption. See *Copperweld Corp. versus. Independence Tube Corp.* 467 U.S. 752 (1984).

is associated with expanding output, while a vertical merger internalizes a *positive* pecuniary externality that is associated with expanding downstream output. This basic difference reflects the fact that a horizontal merger combines substitutes, while a vertical merger combines complements.

B. Assessing whether EDM is a cognizable merger efficiency.

Section 6 of the 2020 Guidelines addresses EDM. That section begins by stating:

The Agencies evaluate efficiency claims by the parties using the approach set forth in Section 10 of the Horizontal Merger Guidelines, as elaborated here. *Cognizable efficiencies are merger-specific efficiencies that have been verified and do not arise from anticompetitive reductions in output or service.* The Agencies do not challenge a merger if cognizable efficiencies are of a character and magnitude such that the merger is unlikely to be anticompetitive in any relevant market. [emphasis added]

How does one determine whether EDM satisfies the three conditions that are required for an efficiency to be cognizable? Two of those requirements are usually automatic for EDM. Conceptually, EDM is automatically “verified” because vertical merger will (by assumption) cause the downstream division to set prices to maximize the combined profits of the upstream and downstream divisions of integrated firm.⁵³ Furthermore, by its nature, EDM also does not “arise from anticompetitive reductions in output or service.” To the contrary, EDM is associated with an *increase* in downstream output. That leaves merger-specificity.

As with all efficiencies, EDM must be shown to be merger-specific to be credited. While we must assume that a vertical merger will lead to the elimination of double marginalization, that certainly does not imply that EDM is merger-specific. Merger-specificity is a factual question that must be assessed on a case-by-case basis. In court, the burden of proof of establishing the merger-specificity of EDM rests upon the defendant, as it does for all claimed efficiencies.

In an influential and timely speech in November 2016, then Deputy Assistant Attorney General Jonathan Sallet emphasized the importance of merger-specificity, stating: “Indeed, I think it is fair to say that an omni-present question in the recent completed reviews of vertical transactions is whether benefits are merger-specific or whether the same efficiencies can be gained through contracting.”⁵⁴

Section 10 of the 2010 HMGs states the following about merger-specificity:

The Agencies credit only those efficiencies likely to be accomplished with the proposed merger and unlikely to be accomplished in the absence of either the

⁵³ I state “conceptually” to emphasize that *quantifying* EDM is quite another matter, as that will depend on the specific evidence put forward, which must be verified. The next subsection discusses how to quantify EDM, which includes such issues as whether the upstream merged firm faces capacity constraints and whether the downstream merging firm has entered into contracts with other input suppliers that limit the short-term magnitude of EDM.

⁵⁴ Sallet (2016, pp. 5–6).

proposed merger or another means having comparable anticompetitive effects. These are termed merger-specific efficiencies. *Only alternatives that are practical in the business situation faced by the merging firms are considered in making this determination. The Agencies do not insist upon a less restrictive alternative that is merely theoretical* (emphasis added).

The 2020 VMGs adopt a very similar approach. They explicitly indicate how the agencies will evaluate the merger-specificity of EDM:

In assessing the merger-specificity of the elimination of double marginalization, the Agencies typically examine whether it would likely be less costly for the merged firm to self-supply inputs following the merger than for the downstream firm to purchase them from one or more independent firms absent the merger. The merging parties' evidence about existing contracting practices is often the best evidence of the price the downstream firm would likely pay for inputs absent the merger. The Agencies also consider other evidence, such as contracts between similarly situated firms in the same industry and contracting efforts considered by the merging firms. The Agencies do not, however, reject the merger specificity of the elimination of double marginalization solely because it could theoretically be achieved but for the merger, if such practices are not reflected in documentary evidence.

Following the 2020 Guidelines, if other firms in the industry have managed to eliminate double marginalization through contract, perhaps by using two-part tariffs or other non-linear pricing schemes, the merging firms might well be able to do likewise. In that case, EDM would not be merger-specific and would not be credited as an efficiency in the merger analysis.

In the *AT&T/Time Warner* case, I followed the approach to the merger-specificity of EDM that is described in the 2010 HMGs, which is very similar to the one now articulated in the 2020 VMGs. Based on that analysis, I credited some EDM associated with the integration of the Turner Content and DirecTV as merger-specific. I made that determination on the basis of a review of the licensing contracts between providers of basic cable content (including Turner) and MVPDs (including DirecTV).

That review indicated that the norm in the industry was for MVPDs to pay for basic cable content on a per-subscriber basis.⁵⁵ In addition, I looked in vain for evidence that these common contracting practices were likely to change in the near future, either in general or specifically as between Turner and DirecTV, which might have supported a conclusion that the elimination of double marginalization between the Turner Content and DirecTV was not merger-specific.

AT&T was, of course, quite willing to accept EDM as a cognizable efficiency while denying that DirecTV's interests would have any impact on the negotiations between Turner and rival MVPDs. I made clear to Judge Leon that crediting EDM

⁵⁵ These licensing agreements also specified how the associated advertising slots and revenue would be treated.

went hand-in-hand with RRC, because both of these effects follow from the standard assumption that the merged firm will be operated to maximize the combined profits of its various divisions, namely Turner and DirecTV.⁵⁶

Nonetheless, I was criticized in some quarters for “conceding” that the merger would most likely generate some vertical efficiencies in the form of EDM. I stand by my analysis of the merger-specificity of EDM between Turner and DirecTV, which relied on real-world evidence about contracting practices. My approach was consistent with the 2010 HMGs and is consistent with the 2020 VMGs as well. Of course, the DOJ might have argued against crediting EDM between Turner and DirecTV as merger-specific. However, that would have required applying a stricter standard to merger-specificity for EDM than the HMGs generally apply to efficiencies (see the passage quoted and emphasized above). That would have been very challenging in court.

Looking ahead, the 2020 VMGs announce that the agencies will apply this same basic approach to the merger-specificity of EDM. Of course, the agencies could modify the VMGs and adopt a more skeptical approach, as is advocated by Salop (2019). Salop (2021) proposes the following specific language for guidelines: “The Agencies will not presume merger-specificity simply because it was not achieved in the pre-merger market, but will expect the parties to provide credible evidence of pre-merger impediments and how the merger will eliminate the impediments. The existence of some bargaining frictions is not sufficient evidence since all negotiations involve bargaining frictions.”⁵⁷ Salop’s approach gives far less weight to evidence that industry participants had been unable to solve EDM by contract. Meeting his requirements could be difficult if not impossible for the merging parties in many cases.

Whether the stricter standard that is advocated by Salop would serve to promote competition or to hinder competition is a difficult judgment call. Greater skepticism about the merger-specificity of EDM could usefully offset the overly favorable treatment of EDM that necessarily results from assuming for methodological reasons that EDM will be achieved after the merger. However, it might also lead the agencies to block deals that in fact would generate substantial merger-specific efficiencies. In any event, it is doubtful that the courts would readily accept this stricter standard, because it puts much less weight on real-world evidence and because it is more stringent than the approach that has been taken toward efficiencies since 1997 by the HMGs.

⁵⁶ *AT&T/Time Warner Trial Transcript* at 2250–2251 (Shapiro).

⁵⁷ Salop (2021, p. 18) with footnote. Salop adds: “Impediments to elimination of double marginalization arising from pre-merger coordination or anticompetitive agreements will not be credited by the Agencies”.

C. Quantifying EDM.

In cases where EDM is merger-specific, it is desirable to measure EDM, a necessary steps to perform a quantitative analysis integrating EDM and RRC, as discussed in Sect. 4 below.⁵⁸

The 2020 VMGs state the following about quantifying EDM:

While it is incumbent upon the merging firms to provide substantiation for claims that they will benefit from the elimination of double marginalization, the Agencies may independently attempt to quantify its effect based on all available evidence, including the evidence they develop to assess the potential for foreclosure or raising rivals' costs. In verifying the elimination of double marginalization, the agencies typically examine the likely *cost saving to the merged firm from self-supplying inputs* that would have been purchased from independent suppliers absent the merger. Creditable quantifications of the elimination of double marginalization are generally of similar precision and reliability to the Agencies' quantifications of likely foreclosure, raising rivals' costs, or other competitive effects. [emphasis added]

One of the shortcomings of the 2020 Guidelines is that they do not provide further explanation for how to quantify EDM. The starting point is to measure the gap between (a) the per-unit price that is charged by the upstream firm to the downstream firm, and (b) the upstream firm's true economic marginal cost. The term "true economic marginal cost" is important here; it includes opportunity cost and accounts for other factors, such as limited upstream capacity. In the case of Turner and DirecTV, the relevant "unit" was a subscriber, and this gap was equal to the incremental revenue that Turner would earn from a subscriber that DirecTV would attract by reducing its price.⁵⁹

Importantly, when measuring Turner's revenue from an incremental DirecTV subscriber, one must account for the *opportunity cost* to Turner when DirecTV gains a subscriber, which comes in the form of reduced Turner licensing revenue from that subscriber's alternative MVPD. To see why this opportunity cost is so important, consider the polar case in which all incremental DirecTV subscribers are switching from rival MVPDs where they also had access to the Turner Content. In that case, Turner gains *zero* incremental revenue when DirecTV attracts an additional subscriber by reducing its price, because Turner viewership does not rise.⁶⁰ In that polar case, the magnitude of the EDM effect is zero.

⁵⁸ This section also does not discuss the rate at which EDM is passed through in the form of lower downstream prices. Downstream prices are addressed in Sect. 4 below.

⁵⁹ This statement assumes that having an incremental DirecTV subscriber would not cause Turner to incur any incremental out-of-pocket costs. The revenue that was earned by Turner on an incremental DirecTV subscriber had two components: (1) the per-subscriber fee that was paid by DirecTV to Turner; and (2) the advertising revenue that was earned by Turner from that subscriber. See "Appendix" K to the Shapiro Report, pp. 147–149.

⁶⁰ This statement relies on the simplifying assumption that the per-subscriber rate that rival MVPDs pay to Turner is the same as the rate that DirecTV pays to Turner. My testimony accounted for any differences in these rates.

More generally, if the upstream firm's price/cost margin for sales to the downstream firm is M , and if a fraction θ of customers attracted by the downstream firm's lower price were already generating that same margin for the upstream firm, then the opportunity cost to the upstream merging firm when the downstream merging firm expands output is equal to θM . As a result, the magnitude of EDM is not M but only $(1 - \theta)M$.

In the *AT&T/Time Warner* case, I calculated EDM as \$1.20 per subscriber per month, which corresponded to about \$370 million per year.⁶¹ Purely for illustrative purposes, this \$1.20 PSPM figure would result if the price/cost margin on the Turner Content (M) were \$6 PSPM and if 20% of the new subscribers that would be attracted to DirecTV by a price decrease would be new Turner viewers. It would have been a major error to use the Turner price/cost margin of \$6 PSPM as the magnitude of EDM; that would have overstated EDM by a factor of five.

Notably, this opportunity cost of θM arises even if the downstream merging firm does not purchase the input from the upstream merging firm. Such "diagonal" mergers internalize the lost margins experienced by the upstream merging firm when the downstream merging firm expands output. As a result, the merged firm experiences an additional incremental cost that is equal to θM of expanding downstream output. That creates an incentive for the merged firm to *increase* its downstream price.⁶² Diagonal mergers therefore increase the marginal cost of the downstream merging firm *and* the marginal costs of its rivals. Absent other cognizable efficiencies, this implies that diagonal mergers lead to higher downstream prices, which harm downstream customers. The methods explained in Sect. 4 can be used to quantify their effects on downstream prices.

This analysis nicely illustrates why vertical mergers that involve an input that is widely used by downstream firms are the ones that are most likely to harm downstream customers. In cases such as *AT&T/Time Warner*—where the input that is being acquired is widely used by downstream firms—EDM will be small for the reasons just given. At the same time, the more widely the input is used, the more likely will downstream rivals have difficulty competing effectively without it, and hence the larger the RRC effects.

4 Effects on Downstream Customers

Quantifying the effect of a vertical merger on downstream customers requires an integrated analysis that accounts for both RRC and EDM effects. See Fig. 1 above. The need for an integrated analysis is recognized in the 2020 VMGs, which state (p. 5):

For mergers that warrant scrutiny, the Agencies will determine whether, based on an evaluation of the facts and circumstances of the relevant market, the merger may substantially lessen competition. This evaluation will generally

⁶¹ Shapiro Report, p. 63.

⁶² See the vGUPPID1 metric in Moresi and Salop (2013). Chen (2001) provides a related analysis.

include an assessment of the likely *net effect* on competition in the relevant market of all changes to the merged firm's unilateral incentives. The merged firm may foreclose its rivals or raise their costs by changing the terms offered for the related product, but a vertical merger can also change other incentives. The elimination of double marginalization, for example, can confer on the merged firm an incentive to set lower downstream prices. The price that a downstream firm pays for an input supplied by an independent upstream firm may include a markup over the upstream firm's marginal cost. If a downstream and an upstream firm merge, and the merged firm supplies itself with its own related product, it will have access to the input at cost. (See Sect. 6.) *The likely merger-induced increase or decrease in downstream prices would be determined by considering the impact of both these effects, as well as any other competitive effects.* [emphasis added]

The 2020 Guidelines then state: "Where sufficient relevant data are available, the Agencies may construct economic models designed to quantify the net effect on competition." That is what I did in the *AT&T/Time Warner* case.

Importantly, some quantification is needed to compare the size of the RRC and EDM effects and to assess fully their combined impact. As discussed below, the need for quantification presents significant challenges for the government in court because any quantification will rely on documents, testimony, and modeling assumptions that are subject to challenge by the merging parties. The allocation of the burden of proof thus becomes quite important in practice.

A. Integrated analysis of RRC and EDM.

If the RRC effect and the EDM effects can be quantified, they can be compared. The goal of this analysis is to estimate the net effect of the merger on downstream customers. The basic tradeoff is clear enough: the downstream merging firm will experience a cost reduction, and its rivals will experience a cost increase.⁶³ This analysis applies when EDM is found to be merger-specific.

The modeling decisions that I made in the *AT&T/Time Warner* case may be instructive for those who seek to offer an integrated analysis of RRC and EDM, as is called for in the 2020 VMGs. In this Sect. 4A, I explain what I did in the *AT&T/Time Warner* case and why. Section 4B discusses more broadly the challenges that are faced by antitrust economists when presenting these types of economic models and calculations in court. Section 4C discusses how this analysis of RRC and EDM can play out in court under the legal burden-shifting approach that applies when mergers are litigated.

As a first step, it is worth emphasizing that the formula that was used above to quantify RRC, namely $L * D * M/2$, takes as given the price that is charged by the

⁶³ If the cognizable EDM effect is less than the opportunity cost effect that was discussed in Sect. 3C above, then the downstream merging firm will experience a cost increase, and there is no need to engage in this balancing.

downstream merging firm, which enters into its pre-merger downstream margin, M . The variables L and D also are estimated based on pre-merger conditions. Likewise, the expression for EDM was derived taking as given the pre-merger prices that are charged by the upstream merging firm. Using pre-merger variables here is akin to calculating upward pricing pressure in horizontal mergers based on pre-merger diversion ratios and price/cost margins.

In my view, this type of analysis is highly informative and often practical, even though it does not constitute a full equilibrium analysis such as one obtains using a full-blown merger simulation. As with horizontal merger analysis, there is a tradeoff between a simpler and more transparent analysis and one that is more complex and relies on more assumptions but purports to give a more accurate answer.

In the *AT&T/Time Warner* case, the calculations that were performed using pre-merger upstream and downstream prices indicated that DirecTV's rivals would experience an aggregate cost increase of \$731 million per year and DirecTV would experience a cost decrease of \$370 million per year. The fact that the estimated size of RRC was roughly double the estimate size of EDM gave me confidence that the merger would increase MVPDs' costs in the aggregate. The aggregate (net) increase in MVPDs' costs was \$361 million per year, adding up across their diverse geographies.

These calculations nicely illustrate why downstream market shares do not provide good screens in vertical merger cases that involve possible input foreclosure. My model predicted *greater* harm to consumers in local areas where DirecTV's downstream market share was *smaller*. This resulted because the RRC effect that was associated with the Turner Content was greater in those areas.⁶⁴

In my opinion, the aggregate increase in MVPDs' costs served as a useful and relatively simple metric that was well worth reporting as part of my testimony. In the interests of simplicity and transparency (salient issues in a litigation setting) it would not be unreasonable to conclude that a merger would likely harm downstream customers if it would lead to a large aggregate (net) cost increase at the downstream firms. I offered an estimate of harm to consumers that was based on applying a passthrough rate of 75% to 100% to this aggregate (net) increase in MVPD costs. But I noted that this simple methodology "is equivalent to assuming that the same pass-through rate applies to the cost changes experienced by all of the MVPDs."⁶⁵

Preferring not to rely too much on that assumption, and recognizing the theoretical problems with defining and applying a single passthrough rate to the aggregate increase in MVPDs' costs, I looked for a better way to estimate the impact of the merger on downstream prices. I gave two approaches the most serious consideration: (1) building a model of downstream competition and using that model to calculate the impact on downstream prices of the vector of RRC and EDM cost changes that

⁶⁴ Section 6 of the Shapiro Report, "Impact on Consumers in Local Areas," states: "All else equal, subscribers in Zones with more rival MVPDs are likely to observe higher post-merger prices because of the greater impact of the increase in rivals' costs." See p. 68 and Fig. 18.

⁶⁵ Shapiro Report, p. 66. I based the 75% to 100% passthrough rate on empirical evidence with regarding to the rate at which AT&T had historically passed through content price increases to households.

were measured as described above (based on pre-merger prices); and (2) performing a full merger simulation in which RRC and EDM are calculated based on equilibrium prices rather than pre-merger prices.

My testimony was based on the first approach. This had the major advantage of allowing me to calculate RRC and EDM with the use of pre-merger variables. That in turn allowed me to start my testimony by explaining the basic RRC logic in a bargaining context as described above, using the available, pre-merger data. AT&T was vigorously attacking the bargaining model and the whole RRC concept, so I wanted to make this first step as clear and as well-grounded as possible in the evidence. Explaining RRC in a bargaining context was a predicate before I could even talk about any effect on downstream prices. I also realized that quantifying the RRC/bargaining effect in front of a generalist judge would be a challenge. That challenge proved to be especially grave in the case of Judge Leon, who made it clear that he had little interest in economic models and wanted to keep the presentation of quantitative evidence to a minimum.⁶⁶

The approach that I took still required me to put forward a model of downstream competition. I used a basic logit model with an outside good, which was calibrated using pre-merger market shares in local MVPD markets and pre-merger margins.⁶⁷ Rogerson (2020) correctly notes that the approach that I took “was not fully correct” in the sense that I calculated RRC and EDM based on pre-merger prices rather than equilibrium prices.⁶⁸ Even though I took the simplest approach that in my view gave a reliable estimate of downstream price effects, Judge Leon mocked my model as overly complex:

After hearing Professor Shapiro’s bargaining model described in open Court, I wondered on the record whether its complexity made it seem like a Rube Goldberg contraption. Professor Carlton agreed at the trial that that was a fair description. See Tr. 2447:2–7 (Carlton).⁶⁹

⁶⁶ I continue to urge judges in complex antitrust cases to admit the expert reports into evidence. That did not happen in the *AT&T/Time Warner* case. Only my live testimony was admitted into evidence, and Judge Leon sharply limited my ability to present figures and charts. I favor an approach where economic experts submit their direct testimony in written form. That written direct testimony can be much shorter than the long and detailed expert reports that are commonly submitted in major antitrust cases, which tend to be comprehensive because the expert is precluded from offering testimony that is not disclosed in those reports.

⁶⁷ Shapiro Report pp. 66–68. An additional complication arose because downstream competition varied from one geographic area to another. While DirecTV and Dish were present across the country, cable companies only compete as MVPDs in their service areas. I used 1174 Local Footprint Overlap Zones in which residents had access to video offerings from the same set of MVPDs. See Shapiro Report p. 36.

⁶⁸ Rogerson (2020, p. 428). Rogerson further explains: “This procedure essentially ignored equilibrium feedback effects and is not equivalent to the fully correct procedure of calculating the new equilibrium conditions determining both upstream and downstream prices and finding a vector of upstream and downstream prices that simultaneously satisfies all of the new conditions. Since the equilibrium feedback effects can be complex it is difficult to say how the Department of Justice’s estimate of the consumer harm generated by the merger would have changed had it used the fully correct procedure”.

⁶⁹ District Court Opinion in *AT&T/Time Warner*, p. 149.

The lesson here from the *AT&T/Time Warner* case is crystal clear: the government will face great difficulty winning a vertical merger challenge by constructing “economic models designed to quantify the net effect on competition,” as called for under the 2020 VMGs, if the merging companies have no incentive to engage honestly with those models and especially if they face a judge as innumerate as Judge Leon. The burden-shifting approach in Sect. 4C incentivizes the merging parties to put forward quantitative models to rebut the government’s *prima facie* case. That encourages more informative issue joinder.

B. Complexity and robustness.

What does all of this imply about the role of economists in evaluating vertical mergers?

The perspective that I have offered here is based on my testimony in the *AT&T/Time Warner* case. Of course, that was only one case in front of one judge. Looking ahead and anticipating how expert economic testimony in vertical merger cases will be greeted in court, I am concerned that proper enforcement will be crippled if the agencies are required by the courts to quantify net harm to downstream customers in order to establish their *prima facie* case. We can see from the *AT&T/Time Warner* case that such an approach would give the merging parties little or no incentive to engage honestly with the necessary economic modeling. If the 2020 VMGs are applied in that manner when vertical mergers are litigated, they will undermine rather than promote effective merger enforcement. But that is not necessary. See Sect. 4C.

Very different considerations apply during the investigative phase. Sophisticated analyses can be performed when the agencies investigate vertical mergers, and these analyses can influence enforcement decisions even if they would be difficult to present in court. These analyses can be conducted by the economists at the Economic Analysis Group at the DOJ Antitrust Division or at the FTC’s Bureau of Economics. They also can be put forward by economists who appear in front of the agencies, either for the merging parties or for interested third parties.

From this perspective, the 2020 VMGs are a missed opportunity to articulate more fully how the agencies will conduct these types of analyses and how they will evaluate analyses presented to them by outside economists. Economists at both agencies have extensive experience analyzing vertical mergers, including performing “vertical arithmetic” to assess the profitability of full input foreclosure, using bargaining models, calculating vertical upward pricing pressure indices, and running vertical merger simulations. Very little of that learning and experience is reflected in the 2020 VMGs.

Hopefully, we will learn more in the years ahead about which types of quantitative vertical merger analysis are most reliable and robust, just as we have learned in recent years about upward pricing pressure and merger simulation in the context of horizontal mergers. Rogerson (2020, p. 425) favors full-blown merger simulation: “At the moment it appears that the only method of assessing the full equilibrium impact of a vertical merger, taking both the BLR/RRC effects and the EDM

effect into account, is to try to directly estimate demand and cost functions and then conduct a full-blown simulation.” The legal burden-shifting approach that will be described below promotes the use of the most reliable methods in litigation as well as at the agencies. How often economists can offer reliable and robust equilibrium models remains to be seen.

Referring to the relevant literature, Rogerson (2020, p. 426) states: “These papers collectively show that the net welfare impact of a vertical merger can be positive or negative and that the results hinge sensitively on the specific functional form assumption on demand.” He explains that the literature contains various models in which the direction of the net effects depends on the parameters, sometimes in a delicate manner. Lu, Moresi, and Salop (2007) offer a simple but very special equilibrium model in which vertical mergers always benefit downstream customers.⁷⁰ Das Varma and De Stefano (2020) offer a more general analysis that is highly informative as we seek to understand just how RRC and EDM interact in a full equilibrium model. Domnenko and Sibley (2020) usefully provide Monte Carlo simulations for the cases of linear and logit demand systems.

However, so far at least, the gap between theory and practice remains large. Fragile models are of little use in practice. The search for robust findings that are based on observable variables must go on. Robustness and simplicity are at a premium in court.

Economists need to be realistic about what can and cannot be quantified in an informative and reliable manner. The great strength of economists in merger analysis is our ability systematically to track how a merger will alter economic incentives by internalizing the effects between the two merging firms.

But our models are necessarily simplified versions of reality and cannot be expected to give precise estimates of economic effects.⁷¹ The *AT&T/Time Warner* case illustrates the necessity of making simplifications to build a tractable model. For example, my quantification did not account for existing long-term contracts (see above), made certain assumptions about customer switching patterns for MVPD subscription services, and did not account for post-merger adjustments in the prices that would be charged to MVPDs by other content providers. Inevitably, the need to make simplifying assumptions provides fertile ground for hostile cross-examination, especially in front of a skeptical judge who has a distaste for economic models.⁷²

⁷⁰ The Lu et al. (2007) model has one upstream firm and two downstream firms. Each downstream product uses one unit of the input, and the downstream demand system is symmetric with linear demand. In this setting they (p. 12) show that a vertical merger will cause both downstream prices to fall.

⁷¹ I am distinguishing here between models that are used to predict effects and more direct empirical evidence of the effects of prior mergers, such as in the form of merger retrospectives. Merger retrospectives need not rely on formal oligopoly models. Of course, the usual econometric issues arise in measuring the effects of prior mergers, and there will always be the question of just what one learns about a currently proposed merger from distinct prior mergers.

⁷² Judge Leon made his distaste for economic models plain. He also exhibited open hostility toward experts in general and me in particular. Just minutes before I took the witness stand, he stated: “Experts are notoriously like this. It’s their nature. They think they’re the smartest thing ever and they know all the answers and they know all the nuances and blah, blah, blah.” Trial Transcript at 2164–2165. Regarding me in particular, in response to a scheduling query he had received from Judge Robert Paine in Richmond, Virginia, that related to my testimony, about which I knew nothing and over which I had no con-

C. Applying the Baker-Hughes burden-shifting approach to EDM.

Antitrust law applies a three-step burden shifting approach in merger cases, which is based on the 1990 *Baker-Hughes* case.⁷³ The Appeals Court in the *AT&T/Time Warner* case explained⁷⁴:

Under this framework, the government must first establish a *prima facie* case that the merger is likely to substantially lessen competition in the relevant market.... [In a vertical merger,] the government must make a ‘fact-specific’ showing that the proposed merger is ‘likely to be anticompetitive.’ Once the *prima facie* case is established, the burden shifts to the defendant to present evidence that the *prima facie* case ‘inaccurately predicts the relevant transaction’s probable effect on future competition,’ or to ‘sufficiently discredit’ the evidence underlying the *prima facie* case. Upon such rebuttal, ‘the burden of producing additional evidence of anticompetitive effects shifts to the government, and merges with the ultimate burden of persuasion, which remains with the government at all times.’

The above analysis of RRC and EDM fits nicely into this three-step burden-shifting approach.

1. First, the agency seeks to establish its *prima facie* case. The agency could accomplish this by presenting evidence that the merger will substantially raise rivals’ costs. This might be achieved purely through qualitative evidence, but in cases where the necessary data are available, quantitative evidence would be useful to show that the RRC effects are substantial enough to warrant prohibition of the merger under the Section 7 of the Clayton Act. EDM is not considered as part of this first step.
2. Next, if the agency succeeds in establishing its *prima facie* case, then the merging parties have the opportunity to rebut that case. AT&T did this in large part by discrediting the evidence underlying the *prima facie* case. Rebuttal also can involve presenting evidence that the merger is likely to enhance rather than lessen competition. Presumably, the merging parties will claim EDM and other cognizable efficiencies as part of their rebuttal case. The merging parties bear the burden of showing that EDM and other efficiencies are not only cognizable but sufficient in magnitude to rebut the *prima facie* case. This might involve presenting an economic model of the type developed in Sects. 4A, B, which would evaluate the combined impact of RRC and EDM on downstream prices and downstream customers.

Footnote 72 (continued)

trol whatsoever, he stated: “This man is coming here to testify in one of the largest antitrust cases by the characterization of the government in the last 50 years. He’s come here and he’s scheduled to be in Richmond tomorrow? ... I don’t know this guy. I don’t know what his game plan is or how he does things. ... I can’t believe that he put himself in this position. It’s stunning to me” Trial Transcript at 2165–2166.

⁷³ *United States v. Baker Hughes*, 908 F.2d 981 (DC Circuit, 1990).

⁷⁴ Appeals Court at 1032, citations omitted.

3. If the merging parties are able to rebut the *prima facie* case, the government can then seek to show that, considering the evidence as a whole, including cognizable efficiencies, the merger may substantially lessen competition and harm downstream customers. At this point, the government might well offer economic models of the type that were developed above in Sects. 4A, B and were identified in the 2020 VMGs.

In cases where the government is able to establish its *prima facie* case, this sequencing forces the merging firms to engage seriously in modeling the tradeoffs that are involved when RRC and EDM are both present. A virtue of this burden-shifting approach is that it encourages both the government and the merging parties to engage seriously in balancing RRC and EDM effects when necessary, without imposing an overly high burden of quantification on the government at the first step. Unfortunately, the procedural rules imposed by Judge Leon made it impossible for the DOJ to follow this approach in the *AT&T/Time Warner* case.⁷⁵

5 Binding Arbitration as a Remedy

There is yet one more major obstacle to vertical merger enforcement that must be addressed.

Shortly after the DOJ challenged the proposed merger between AT&T and Time Warner, those two merging firms acted to weaken the government's case.

A week after the government filed suit to stop the proposed merger, Turner Broadcasting sent letters to approximately 1000 distributors 'irrevocably offering' to engage in 'baseball style' arbitration at any time within a seven-year period, subject to certain conditions not relevant here. According to President of Turner Content Distribution Richard Warren, the offer of arbitration agreements was designed to 'address the government's concern that as a result of being . . . commonly owned by AT&T, [Turner Broadcasting] would have an incentive to drive prices higher and go dark with [its] affiliates,' Tr. 1182 (April 3, 2018). In the event of a failure to agree on renewal terms, Turner Broadcasting agreed that the distributor would have the right to continue carrying Turner networks pending arbitration, subject to the same terms and conditions in the distributor's existing contract.⁷⁶

⁷⁵ The natural way to follow this approach would have been to have three rounds of expert reports, mirroring the law's three-step burden-shifting framework. In the first round, the DOJ's expert would address RRC. In the second round, AT&T's expert would presumably try to rebut that analysis and show that the EDM effects outweigh the RRC effects. In the third, round, the DOJ's expert would try rebut that analysis and address the RRC and EDM effects in an integrated fashion. None of that was possible because Judge Leon allowed just two rounds of expert reports. Each round was submitted simultaneously by the DOJ and AT&T, and the second-round reports were confined to rebutting the other side's first-round reports. These procedural rules forced me to address the RRC and EDM effects in an integrated manner in my initial expert report.

⁷⁶ Appeals Court at 1034–35.

This strategic move by AT&T and Turner presented difficulties for the DOJ. At trial, AT&T argued that Turner's offer of binding arbitration would prevent Turner from increasing prices to rival MVPDs. That assertion was especially potent because the DOJ had agreed to a similar provision in allowing the merger between Comcast and NBC/Universal to be consummated, and Judge Leon himself had been supervising that consent decree since 2011. DOJ had repeatedly told Judge Leon that binding arbitration was an effective remedy in the Comcast/NBCU merger. Referring to that merger, the appeals court stated bluntly: "There the government had recognized, 'especially in vertical mergers, that conduct remedies,' such as the ones proposed [in the Comcast case], 'can be a very useful tool to address the competitive problems while preserving competition and allowing efficiencies' that 'may result from the transaction.'"⁷⁷

The DOJ never adequately explained why the arbitration remedy used in the Comcast/NBCU merger was unacceptable for the AT&T/Time Warner merger. There were widespread suspicions that the DOJ was unwilling to settle the case because Donald Trump, as a candidate in 2016, had made the following statement at a campaign rally: "As an example of the power structure I'm fighting, AT&T is buying Time Warner and thus CNN, a deal we will not approve in my administration because it's too much concentration of power in the hands of too few."⁷⁸

The arbitration remedy used in the Comcast/NBCU merger was consistent with the Antitrust Division's 2011 Policy Guide to Merger Remedies. Section II.B of that policy guide, entitled "Conduct Remedies," states: "Conduct remedies can be an effective method for dealing with competition concerns raised by vertical mergers."⁷⁹ The Policy Guide made it clear that the Antitrust Division would use conduct remedies in vertical merger cases if they were effective and enforceable. "There is a panoply of conduct remedies that may be effective in preserving competition. No matter what type of conduct remedy is considered, however, a remedy is not effective if it cannot be enforced."⁸⁰

Sallet (2016) reiterated this approach, stating: "To be employed, conduct remedies must be adequate to address identified risks, must be able to be monitored by the Division or a court, and must be capable of being effectively enforced in a timely manner."⁸¹ This policy guidance led numerous observers to predict that the Antitrust Division would settle the *AT&T/Time Warner* case as it had the Comcast/NBCU case.

However, just days before the DOJ filed its complaint against AT&T and Time Warner, Assistant Attorney General Makan Delrahim gave a speech in which he announced that the Antitrust Division would generally *not* accept behavioral remedies, even for vertical mergers. In his speech, Delrahim equated behavioral remedies

⁷⁷ Appeals Court at 1041.

⁷⁸ Brian Fung, "Why Trump Might Not Block the AT&T-Time Warner Merger, After All," *Washington Post*, November 11, 2016.

⁷⁹ Department of Justice (2011, p. 12). The Antitrust Division subsequently updated this policy guide. See Department of Justice (2020).

⁸⁰ Department of Justice (2011, p. 13) (footnote omitted).

⁸¹ Sallet (2016, p. 11).

with regulation, which in his view impinge on economic liberty. He stated: “Some economies are centrally planned and others are highly regulated, but in the United States our economy is premised on liberty.”⁸² He expressed general antipathy to behavioral remedies, stating: “Instead of protecting the competition that might be lost in an unlawful merger, a behavioral remedy supplants competition with regulation; it replaces disaggregated decision making with central planning.”⁸³ He added: “Like any regulatory scheme, behavioral remedies require centralized decisions instead of a free market process.”⁸⁴

This sharp policy change at the Antitrust Division with regard to acceptable remedies in vertical merger cases was not well supported, to put it mildly. Worse yet, the timing of this sharp change fueled the belief that Delrahim was acting at the behest of the White House. Furthermore, as we now know, Delrahim’s assertions soon rang hollow when he engineered a far more complex settlement that included extensive and long-lasting behavioral remedies purportedly to resolve the highly concentrating *horizontal* merger between T-Mobile and Sprint.

My analysis addressed the merger between AT&T and Time Warner as originally proposed, not as it was modified in response to the DOJ complaint. Here is a passage from my direct testimony: “Q: Professor, before we leave this particular demonstrative, does the analysis take into account the current contracts of the MVPDs or the proposed arbitration remedy that we’ve heard about? A So, no, it does not. I want to really emphasize this and flag this for Your Honor.”⁸⁵

The appeals court accurately observed that my quantification of harm to consumer “failed to take into account Turner Broadcasting System’s post-litigation irrevocable offers of no-blackout arbitration agreements, which a government expert acknowledged would require a new model.”⁸⁶ This was a key factor in the decision by the appeals court not to reverse Judge Leon. “Not to be overlooked, the district court also credited the efficacy of Turner Broadcasting’s ‘irrevocable’ offer of arbitration agreements with a no-blackout guarantee.”⁸⁷

The *AT&T/Time Warner* case thus has established a precedent that will make it even harder for the government to prevail when challenging vertical mergers based on total input foreclosure or raising rivals’ costs. In addition to all of the difficulties of quantifying the RRC effect that were discussed above, the merging parties can unilaterally offer a contractual commitment that will facially limit the ability of the merged firm to raise the price that it charges for the input to its downstream rivals. The Turner offer to engage in binding arbitration had this feature. In other cases, the

⁸² Delrahim (2017, p. 3).

⁸³ Delrahim (2017, p.5).

⁸⁴ Delrahim (2017, p.6).

⁸⁵ *AT&T/Time Warner* Trial Transcript at 2208–2209 (Shapiro).

⁸⁶ Appeals Court at 1031.

⁸⁷ Appeals Court at 1041. The efficacy of the arbitration remedy was especially important because a key part of AT&T’s defense was the assertion that the Comcast/NBCU merger had not led to higher prices for NBCU content. AT&T was claiming that their unilateral arbitration offer would be as effective as the Comcast/NBCU consent decree, which included DOJ and FCC oversight and enforcement.

merged firm might simply promise not to raise the price of the input for some period of time.

Clearly, the use of arbitration as a remedy replaces competition with governmental oversight. No matter how well-designed, behavioral remedies raise risks because (unlike structural remedies) they attempt to curb anticompetitive behavior in which a merged company has a continuing incentive to engage. In the future, faced with a unilateral offer like that made by AT&T, the government will have to focus more on the likely efficacy of the arbitration mechanism as compared to the disciplining impact of competition.

Effective antitrust enforcement would require the merging parties to show that the regulatory patch that they have constructed will effectively protect consumers. My analysis followed that approach. However, based on the appellate decision in the *AT&T/Time Warner* case, it appears that the *government* will bear the burden of proving that harm to customers will arise notwithstanding this type of regulatory patch. That is likely to prove challenging, as it would seem to necessitate delving into the details of how the proposed regulatory patch will operate and how well it will actually protect downstream rivals and downstream customers. Imposing that burden on the government, even for unilateral commitments that are put forward by the merging parties after litigation has been initiated, is a recipe for under-enforcement of vertical mergers that harm competition by creating incentives for input foreclosure.

The 2020 VMGs are silent on how the agencies will handle any of these complications. That is another missed opportunity. Any competent antitrust attorney who seeks to clear their client's vertical merger will prepare a unilateral contractual offer to announce if and when the government files a complaint that challenges the merger. Given the appellate decision in *AT&T/Time Warner*, the agency will not be able to ignore such regulatory patches in court. But the 2020 VMGs tell us nothing about how the agencies will address these complications during the investigation or litigation phases.

6 Conclusions

The *AT&T/Time Warner* case serves as a warning of the challenges that the DOJ and the FTC will face when they go to court to block vertical mergers. That merger also serves as a valuable case study in how the agencies can develop the economic analysis described in the 2020 Vertical Merger Guidelines in cases that involve total input foreclosure or raising rivals' costs.

Economists have developed a number of methods for quantifying the net effects of such mergers on downstream customers in cases where the elimination of double marginalization is a cognizable efficiency, but more work is needed to identify the best modeling approaches. Sophisticated models can be used during the investigation phase, so long as the results are reasonably accurate and robust. Simplicity and transparency become especially important during the litigation phase. Unfortunately, the 2020 VMGs leave much unsaid about how the agencies will perform these types of analyses.

The *AT&T/Time Warner* merger also shows how the three-step burden-shifting approach that the courts generally employ in merger cases can be applied to vertical mergers that involve input foreclosure. First, the government seeks to establish its *prima facie* case by putting forward evidence that the merger is likely to raise rivals' costs significantly. The government could quantify the RRC effects at this step, but quantification is not required. The elimination of double marginalization is not considered during this first step.

Next, the merging firms can rebut the government's *prima facie* case. That might involve showing that EDM is a cognizable efficiency and that downstream customers will benefit if one accounts for RRC and EDM effects in an integrated manner. The merging firms could also assert other cognizable efficiencies in this rebuttal step.

If the merging firms' rebuttal is successful, the analysis moves to the third step, which gives the government the opportunity to show that, considering all of the evidence, the merger may substantially lessen competition and harm downstream customers. Both the merging firms' rebuttal and the government's response may well involve the type of integrated analysis of RRC and EDM that I performed in the *AT&T/Time Warner* case and that I have described in this article.

More work is needed for the United States to effectively enforce the antitrust laws in a manner that will prevent vertical mergers that may substantially harm competition. Economists can and should continue the important work of building models of vertical mergers that are as simple and accurate as possible, so that these models can effectively be presented in court.

Ironically, just three years after AT&T told a federal judge that acquiring Time Warner could allow it to unlock tremendous efficiencies through vertical integration, AT&T reversed course and decided to sell Time Warner to Discovery. Hopefully, this stunning retreat by AT&T will serve as a reminder to the courts that merger efficiencies are far easier to claim than to achieve.

Finally, I urge the DOJ and FTC to prepare now for their next challenges to vertical mergers, in part by drawing lessons from the *AT&T/Time Warner* litigation. That preparation also should include continuing improvement of the VMGs along with associated speeches and commentary.

Appendix : Recursive Nash Bargaining with Time-Varying Payoffs

This "Appendix" proves that the outcome of recursive Nash Bargaining between a content provider and an MVPD depends on the long-term impact on each of them if they do not reach an agreement. More precisely, the outcome of recursive Nash Bargaining depends upon the *present discounted value* of each party's payoff if they fail to reach an agreement. Xiaowei Yu at Charles River Associates assisted me with this proof.

The two parties are denoted by *A* and *B*. Payoffs are earned at dates $t = 1, 2, \dots$. The one-period discount factor $\delta < 1$ is the same for both parties. During any period in which the two parties have reached an agreement, their combined payoff is denoted by *X*. This simplifying assumption that the flow payoff from agreement

is stationary is not required for the result. The combined present discounted value (PDV) of reaching an agreement is $W = X(1 + \delta + \delta^2 + \dots)$.

The payoffs to A and B during period t if they have *not* reached an agreement are denoted by a_t and b_t respectively. This structure allows for the possibility that one party may incur the bulk of its disagreement costs soon after an impasse occurs, while the other party incurs the bulk of its disagreement costs further into the future. The present discounted value, starting in period t , of the payoff to A if an agreement is never reached is therefore given by

$$A_t = a_t + \delta a_{t+1} + \delta^2 a_{t+2} + \dots$$

and likewise for B , with

$$B_t = b_t + \delta b_{t+1} + \delta^2 b_{t+2} + \dots$$

We assume that there are gains during every period: $X > a_t + b_t$ for all t . We are interested in the Nash Bargaining outcome in which the two parties reach an agreement in the first period and share equally in the gains from trade.

Consider for a moment the outcome of *one-shot* Nash Bargaining at date $t=1$, meaning that the two parties have only one opportunity to reach an agreement. If they fail to reach an agreement at date $t=1$, they will have no further opportunities to do so. In this one-shot Nash Bargaining situation, the walk-away payoffs of the two parties are A_1 and B_1 . Denote by U_1 and V_1 the PDV of the equilibrium payoffs to A and B respectively from one-shot Nash Bargaining. Splitting the gains from trade equally means that U_1 and V_1 must satisfy the following pair of equations:

$$U_1 + V_1 = W \quad \text{and} \quad U_1 - A_1 = V_1 - B_1.$$

Solving gives

$$U_1 = \frac{W + (A_1 - B_1)}{2} \quad \text{and} \quad V_1 = \frac{W + (B_1 - A_1)}{2}.$$

These payoffs reflect the impact of an impasse on the two parties measured in PDV terms.

We now prove by induction that this same result applies with *recursive* Nash Bargaining. This means that when the parties bargain at date $t=1$, they recognize and understand that if they fail to reach an agreement at date $t=1$, they will have further opportunities at dates $t=2, 3, \dots$

Denote by U_t and V_t the PDV of the payoffs to A and B , respectively, if they have not reached an agreement by date t and engage in Nash Bargaining at that date. (Payoffs already earned prior to date t are not included in these variables because they are unaffected by what happens starting at date t , and thus are irrelevant for future decisions.) For ease of exposition, we assume that starting at some large but finite date T , the flow disagreement payoffs to A and B stabilize. Formally this means that $a_t = a$ and $b_t = b$ for $t = T, T+1, \dots$. We now demonstrate that the following PDV payoffs satisfy the requirements of Nash Bargaining at all dates:

$$U_t = \frac{W + (A_t - B_t)}{2} \quad \text{and} \quad V_t = \frac{W + (B_t - A_t)}{2} \quad (1)$$

We begin by considering a date $t > T$. Since the environment is stationary after date T , we know that the PDV of payoffs to A and B if they have not reached an agreement by date $t > T$ and engage in Nash Bargaining at date t does not vary over time after date T . Denote by \bar{U} and \bar{V} these PDV payoffs to A and B respectively.

We now consider Nash Bargaining between A and B at date t . If they fail to reach an agreement at t , their Nash Bargaining payoffs starting at $t+1$ are \bar{U} and \bar{V} respectively. Therefore, their walk-away payoffs at date t are given by $a + \delta\bar{U}$ and $b + \delta\bar{V}$, respectively. Splitting the gains from trade equally requires that their PDV payoffs at date t solve this pair of equations:

$$\bar{U} + \bar{V} = W \quad \text{and} \quad \bar{U} - (a + \delta\bar{U}) = \bar{V} - (b + \delta\bar{V}).$$

Solving for \bar{U} and \bar{V} gives

$$\bar{U} = \frac{W + \left(\frac{a}{1-\delta} - \frac{b}{1-\delta}\right)}{2} \quad \text{and} \quad \bar{V} = \frac{W + \left(\frac{b}{1-\delta} - \frac{a}{1-\delta}\right)}{2}.$$

Since $A_t = a/(1-\delta)$ and $B_t = b/(1-\delta)$ for $t > T$, these equations can be written as

$$\bar{U} = \frac{W + (A_t - B_t)}{2} \quad \text{and} \quad \bar{V} = \frac{W + (B_t - A_t)}{2}.$$

This shows that the claim is true for any $t \geq T$.

We now show the claim is also true for $t < T$, by inducting on the number of periods remaining until date T . Suppose that these two equations apply at date $t \leq T$ and consider Nash Bargaining at date $t-1$. The combined PDV payoff from reaching an agreement is W . The PDV payoff to A from *not* reaching an agreement is given by $a_{t-1} + \delta U_t$, and likewise for B . The PDV payoffs to A and B from Nash Bargaining at date $t-1$ must therefore satisfy:

$$U_{t-1} + V_{t-1} = W \quad \text{and} \quad U_{t-1} - (a_{t-1} + \delta U_t) = V_{t-1} - (b_{t-1} + \delta V_t).$$

Solving for U_{t-1} and V_{t-1} gives

$$U_{t-1} = \frac{W + ((a_{t-1} + \delta U_t) - (b_{t-1} + \delta V_t))}{2},$$

$$V_{t-1} = \frac{W + ((b_{t-1} + \delta V_t) - (a_{t-1} + \delta U_t))}{2}.$$

When we substitute the expressions for U_t and V_t given in Eq. (1) above (this is the induction step), U_{t-1} can be written as

$$U_{t-1} = \frac{1}{2} \left\{ W + a_{t-1} + \frac{\delta W + \delta A_t - \delta B_t}{2} - b_{t-1} - \frac{\delta W - \delta A_t + \delta B_t}{2} \right\} =$$

$$\frac{1}{2} \{ W + a_{t-1} + \delta A_t - b_{t-1} - \delta B_t \} = \frac{W + (A_{t-1} - B_{t-1})}{2}.$$

Since $A_{t-1} = a_{t-1} + \delta A_t$, and $B_{t-1} = b_{t-1} + \delta B_t$. Similarly, we get

$$V_{t-1} = \frac{W + (B_{t-1} - A_{t-1})}{2}.$$

This proves that the outcome of recursive Nash Bargaining at any $t \geq 1$ is the one-shot Nash Bargaining Solution with the use of the present discounted value of disagreement payoffs.

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References

- Atalay, E., Hortacsu, A., & Syverson, C. (2014). Vertical integration and input flows. *American Economic Review*, 104(4), 1120–1148.
- Baker, J. (2011). Comcast/NBCU: The FCC provides a roadmap for vertical merger analysis. *Antitrust*, 25(2), 36–42.
- Chen, Y. (2001). Vertical mergers and their competitive effects. *Rand Journal of Economics*, 32(4), 667–685.
- Coles, M., & Muthoo, A. (2003). Bargaining in a non-stationary environment. *Journal of Economic Theory*, 109(1), 70–89.
- Crawford, G., & Yurukoglu, A. (2012). The welfare effects of bundling in multichannel television markets. *American Economic Review*, 102(2), 643–685.
- Das Varma, G., & De Stefano, M. (2020). Equilibrium analysis of vertical mergers. *The Antitrust Bulletin*, 65(3), 445–458.
- Delrahim, M. (2017). Antitrust and deregulation. Antitrust Division, U.S. Department of Justice, available at <https://www.justice.gov/opa/speech/file/1012086/download>.
- Department of Justice. (2011). *Antitrust division policy guide to merger remedies*, available at <https://www.justice.gov/atr/page/file/1098656/download>.
- Department of Justice. (2020). *Merger remedies manual*, available at <https://www.justice.gov/atr/page/file/1312416/download>.
- Department of Justice and Federal Trade Commission. (2010). *Horizontal merger guidelines*, at <https://www.justice.gov/sites/default/files/atr/legacy/2010/08/19/hmg-2010.pdf>.

- Department of Justice and Federal Trade Commission. (2020). *Vertical merger guidelines*, available at <https://www.justice.gov/atr/page/file/1290686/download>.
- Domnenko, G., & David, S. (2020). *Simulating vertical mergers and the vertical GUPPI approach*, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3606641.
- Federal Communications Commission. (2011). Memorandum Opinion and Order, In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licensees, MB Docket No. 10–56, available at <https://docs.fcc.gov/public/attachments/FCC-11-4A1.pdf>.
- Federal Trade Commission. (2020). Commentary on vertical merger enforcement, December, available at <https://www.ftc.gov/reports/federal-trade-commissions-commentary-vertical-merger-enforcement>.
- Hovenkamp, H., & Shapiro, C. (2019). Horizontal mergers, market structure, and burdens of proof. *Yale Law Journal*, 127(7), 1996–2025, available at <http://faculty.haas.berkeley.edu/shapiro/structuralpresumption.pdf>.
- Lu, S., Moresi, S., & Salop, S. (2007). A note on vertical mergers with an upstream monopolist: Foreclosure and consumer welfare effects, at www.crai.com/sites/default/files/publications/Merging-with-an-upstream-monopolist.pdf.
- Moresi, S., & Salop, S. (2013). vGUPPI: Scoring unilateral pricing incentives in vertical mergers. *Antitrust Law Journal*, 79, 185–214.
- Murphy, K. (2010). Economic analysis of the impact of the proposed Comcast/NBCU transaction on the cost to MVPDs of obtaining access to NBCU programming. Submitted as an attachment to Comments of DirecTV, In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc., for Consent to Assign Licenses or Transfer Control of Licensees, Federal Communications Commission, MB Docket No. 10–56, at <https://ecfsapi.fcc.gov/file/7020510969.pdf>.
- Rogerson, W. (2003). An economic analysis of the competitive effects of the takeover of DirecTV by News Corp. Submitted as an attachment to Comments of Advance Newhouse, Cable One, Cox and Insight, In the Matter of General Motors Corporation, Transferors and the News Corporation Limited, Transferee, For Authority to Transfer Control, MB Docket 03–124.
- Rogerson, W. (2014). a vertical merger in the video programming and distribution industry. In J. Kwoka & L. White (Eds.), *The antitrust revolution* (6th ed., pp. 534–575). Oxford University Press.
- Rogerson, W. (2020). Modeling and predicting the competitive effects of vertical mergers: The bargaining leverage over rivals effect. *Canadian Journal of Economics*, 53(2), 407–436.
- Rubinstein, A. (1982). Perfect equilibrium in a bargaining model. *Econometrica*, 50, 97–109.
- Sallet, J. (2016). The interesting case of the vertical merger, Antitrust Division, U.S. Department of Justice, at <https://www.justice.gov/opa/speech/file/938236/download>.
- Salop, S. (2019). Invigorating vertical merger enforcement. *Yale Law Journal*, 127, 1962–1994.
- Salop, S. (2021). *The 2020 vertical merger guidelines: A suggested revision*, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3550120.
- Salop, S., & Scheffman, D. (1983). Raising rivals' costs. *American Economic Review*, 73(2), 267–277.
- Shapiro, C. (2018). Breathing new life into the consumer welfare standard: The protecting competition standard, FTC Hearings on Competition and Consumer Protection in the 21st Century, Hearing #5: Vertical Merger Analysis and the Consumer Welfare Standard in U.S. Antitrust Law (November 1, 2018), available at https://www.ftc.gov/system/files/documents/public_events/1415284/ftc_hearings_5_georgetown_slides.pdf.
- Shapiro, C. (2019). Testing vertical mergers for input foreclosure, Roundtable on Vertical Mergers in the Technology, Media and Telecom Sector, OECD Competition Committee, DAF/COMP/WD(2019)75, at <http://faculty.haas.berkeley.edu/shapiro/DraftVMGs.pdf>.
- Shapiro, C. (2021) Antitrust: What went wrong and how to fix it, *Antitrust Magazine*, forthcoming, available at <http://faculty.haas.berkeley.edu/shapiro/fixingantitrust.pdf>.
- Shapiro, C., & Shelanski, H. (2021). Judicial response to the 2010 horizontal merger guidelines. *Review of Industrial Organization*, available at <http://faculty.haas.berkeley.edu/shapiro/judicialresponse.pdf>.
- Slaughter, R. (2020). Dissenting statement of commissioner Rebecca Kelly Slaughter. In *Re FTC-DOJ vertical merger guidelines*, Commission File No. P810034.
- Yu, X., & Waehrer, K. (2019). Recursive Nash-in-Nash Bargaining, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3319517.

Exhibit 9



Merger Guidelines

U.S. Department of Justice and the Federal Trade Commission

Issued: December 18, 2023

1. Overview

These Merger Guidelines identify the procedures and enforcement practices the Department of Justice and the Federal Trade Commission (the “Agencies”) most often use to investigate whether mergers violate the antitrust laws. The Agencies enforce the federal antitrust laws, specifically Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2; Section 5 of the Federal Trade Commission Act, 15 U.S.C. § 45; and Sections 3, 7, and 8 of the Clayton Act,¹ 15 U.S.C. §§ 14, 18, 19.² Congress has charged the Agencies with administering these statutes as part of a national policy to promote open and fair competition, including by preventing mergers and acquisitions that would violate these laws. “Federal antitrust law is a central safeguard for the Nation’s free market structures” that ensures “the preservation of economic freedom and our free-enterprise system.”³ It rests on the premise that “[t]he unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress, while at the same time providing an environment conducive to the preservation of our democratic political and social institutions.”⁴

Section 7 of the Clayton Act (“Section 7”) prohibits mergers and acquisitions where “in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.” Competition is a process of rivalry that incentivizes businesses to offer lower prices, improve wages and working conditions, enhance quality and resiliency, innovate, and expand choice, among many other benefits. Mergers that substantially lessen competition or tend to create a monopoly increase, extend, or entrench market power and deprive the public of these benefits. Mergers can lessen competition when they diminish competitive constraints, reduce the number or attractiveness of alternatives available to trading partners, or reduce the intensity with which market participants compete.

Section 7 was designed to arrest anticompetitive tendencies in their incipency.⁵ The Clayton Act therefore requires the Agencies to assess whether mergers present risk to competition. The Supreme Court has explained that “Section 7 itself creates a relatively expansive definition of antitrust liability: To show that a merger is unlawful, a plaintiff need only prove that its effect ‘*may be* substantially to lessen competition’” or to tend to create a monopoly.⁶ Accordingly, the Agencies do not attempt to

¹ As amended under the Celler-Kefauver Antimerger Act of 1950, Pub. L. No. 81-899, 64 Stat. 1125 (1950), and the Hart-Scott-Rodino Antitrust Improvements Act of 1976, 15 U.S.C. § 18a.

² Although these Guidelines focus primarily on Section 7 of the Clayton Act, the Agencies consider whether any of these statutes may be violated by a merger. The various provisions of the Sherman, Clayton, and FTC Acts each have separate standards, and one may be violated when the others are not.

³ *North Carolina State Bd. of Dental Examiners v. FTC*, 574 U.S. 494, 502 (2015).

⁴ *NCAA v. Board of Regents*, 468 U.S. 85, 104 n.27 (1984) (quoting *Northern Pac. R. Co. v. United States*, 356 U.S. 1, 4-5 (1958)); see also *NCAA v. Alston*, 141 S. Ct. 2141, 2147 (2021) (quoting *Board of Regents*, 468 U.S. at 104 n.27).

⁵ See, e.g., *Brown Shoe Co. v. United States*, 370 U.S. 294, 318 nn.32-33 (1962); see also *United States v. AT&T, Inc.*, 916 F.3d 1029, 1032 (D.C. Cir. 2019) (Section 7 “halt[s] incipient monopolies and trade restraints outside the scope of the Sherman Act.” (quoting *Brown Shoe*, 370 U.S. at 318 n.32)); *Saint Alphonsus Medical Center-Nampa v. St. Luke’s*, 778 F.3d 775, 783 (9th Cir. 2015) (Section 7 “intended to arrest anticompetitive tendencies in their incipency.” (quoting *Brown Shoe*, 370 U.S. at 322)); *Polypore Intern., Inc. v. FTC*, 686 F.3d 1208, 1213-14 (11th Cir. 2012) (same). Some other aspects of *Brown Shoe* have been subsequently revisited.

⁶ *California v. Am. Stores Co.*, 495 U.S. 271, 284 (1990) (quoting 15 U.S.C. § 18 with emphasis) (citing *Brown Shoe*, 370 U.S. at 323).

predict the future or calculate precise effects of a merger with certainty. Rather, the Agencies examine the totality of the evidence available to assess the risk the merger presents.

Competition presents itself in myriad ways. To assess the risk of harm to competition in a dynamic and complex economy, the Agencies begin the analysis of a proposed merger by asking: how do firms in this industry compete, and does the merger threaten to substantially lessen competition or to tend to create a monopoly?

The Merger Guidelines set forth several different analytical frameworks (referred to herein as “Guidelines”) to assist the Agencies in assessing whether a merger presents sufficient risk to warrant an enforcement action. These frameworks account for industry-specific market realities and use a variety of indicators and tools, ranging from market structure to direct evidence of the effect on competition, to examine whether the proposed merger may harm competition.

How to Use These Guidelines: When companies propose a merger that raises concerns under one or more Guidelines, the Agencies closely examine the evidence to determine if the facts are sufficient to infer that the effect of the merger may be to substantially lessen competition or to tend to create a monopoly (sometimes referred to as a “prima facie case”).⁷ **Section 2** describes how the Agencies apply these Guidelines. Specifically, Guidelines 1-6 describe distinct frameworks the Agencies use to identify that a merger raises prima facie concerns, and Guidelines 7-11 explain how to apply those frameworks in several specific settings. In all of these situations, the Agencies will also examine relevant evidence to determine if it disproves or rebuts the prima facie case and shows that the merger does not in fact threaten to substantially lessen competition or tend to create a monopoly. **Section 3** identifies rebuttal evidence that the Agencies consider, and that merging parties can present, to rebut an inference of potential harm under these frameworks.⁸ **Section 4** sets forth a non-exhaustive discussion of analytical, economic, and evidentiary tools the Agencies use to evaluate facts, understand the risk of harm to competition, and define relevant markets.

These Guidelines are not mutually exclusive, as a single transaction can have multiple effects or raise concerns in multiple ways. To promote efficient review, for any given transaction the Agencies may limit their analysis to any one Guideline or subset of Guidelines that most readily demonstrates the risks to competition from the transaction.

Guideline 1: Mergers Raise a Presumption of Illegality When They Significantly Increase Concentration in a Highly Concentrated Market. Market concentration is often a useful indicator of a merger’s likely effects on competition. The Agencies therefore presume, unless sufficiently disproved or rebutted, that a merger between competitors that significantly increases concentration and creates or further consolidates a highly concentrated market may substantially lessen competition.

Guideline 2: Mergers Can Violate the Law When They Eliminate Substantial Competition Between Firms. The Agencies examine whether competition between the merging parties is substantial since their merger will necessarily eliminate any competition between them.

⁷ See, e.g., *United States v. AT&T, Inc.*, 916 F.3d at 1032 (explaining that a *prima facie* case can demonstrate a “reasonable probability” of harm to competition either through “statistics about the change in market concentration” or a “fact-specific” showing (quoting *Brown Shoe*, 370 U.S. at 323 n.39)); *United States v. Baker Hughes*, 908 F.2d 981, 982-83 (D.C. Cir. 1990).

⁸ These Guidelines pertain only to the Agencies’ consideration of whether a merger or acquisition may substantially lessen competition or tend to create a monopoly. The consideration of remedies appropriate for mergers that pose that risk is beyond the Merger Guidelines’ scope. The Agencies review proposals to revise a merger in order to alleviate competitive concerns consistent with applicable law regarding remedies.

Guideline 3: Mergers Can Violate the Law When They Increase the Risk of Coordination. The Agencies examine whether a merger increases the risk of anticompetitive coordination. A market that is highly concentrated or has seen prior anticompetitive coordination is inherently vulnerable and the Agencies will infer, subject to rebuttal evidence, that the merger may substantially lessen competition. In a market that is not highly concentrated, the Agencies investigate whether facts suggest a greater risk of coordination than market structure alone would suggest.

Guideline 4: Mergers Can Violate the Law When They Eliminate a Potential Entrant in a Concentrated Market. The Agencies examine whether, in a concentrated market, a merger would (a) eliminate a potential entrant or (b) eliminate current competitive pressure from a perceived potential entrant.

Guideline 5: Mergers Can Violate the Law When They Create a Firm That May Limit Access to Products or Services That Its Rivals Use to Compete. When a merger creates a firm that can limit access to products or services that its rivals use to compete, the Agencies examine the extent to which the merger creates a risk that the merged firm will limit rivals' access, gain or increase access to competitively sensitive information, or deter rivals from investing in the market.

Guideline 6: Mergers Can Violate the Law When They Entrench or Extend a Dominant Position. The Agencies examine whether one of the merging firms already has a dominant position that the merger may reinforce, thereby tending to create a monopoly. They also examine whether the merger may extend that dominant position to substantially lessen competition or tend to create a monopoly in another market.

Guideline 7: When an Industry Undergoes a Trend Toward Consolidation, the Agencies Consider Whether It Increases the Risk a Merger May Substantially Lessen Competition or Tend to Create a Monopoly. A trend toward consolidation can be an important factor in understanding the risks to competition presented by a merger. The Agencies consider this evidence carefully when applying the frameworks in Guidelines 1-6.

Guideline 8: When a Merger is Part of a Series of Multiple Acquisitions, the Agencies May Examine the Whole Series. If an individual transaction is part of a firm's pattern or strategy of multiple acquisitions, the Agencies consider the cumulative effect of the pattern or strategy when applying the frameworks in Guidelines 1-6.

Guideline 9: When a Merger Involves a Multi-Sided Platform, the Agencies Examine Competition Between Platforms, on a Platform, or to Displace a Platform. Multi-sided platforms have characteristics that can exacerbate or accelerate competition problems. The Agencies consider the distinctive characteristics of multi-sided platforms when applying the frameworks in Guidelines 1-6.

Guideline 10: When a Merger Involves Competing Buyers, the Agencies Examine Whether It May Substantially Lessen Competition for Workers, Creators, Suppliers, or Other Providers. The Agencies apply the frameworks in Guidelines 1-6 to assess whether a merger between buyers, including employers, may substantially lessen competition or tend to create a monopoly.

Guideline 11: When an Acquisition Involves Partial Ownership or Minority Interests, the Agencies Examine Its Impact on Competition. The Agencies apply the frameworks in Guidelines 1-6 to assess if an acquisition of partial control or common ownership may substantially lessen competition.

* * *

This edition of the Merger Guidelines consolidates, revises, and replaces the various versions of Merger Guidelines previously issued by the Agencies. The revision builds on the learning and experience reflected in those prior Guidelines and successive revisions. These Guidelines reflect the collected experience of the Agencies over many years of merger review in a changing economy and have been refined through an extensive public consultation process.

As a statement of the Agencies' law enforcement procedures and practices, the Merger Guidelines create no independent rights or obligations, do not affect the rights or obligations of private parties, and do not limit the discretion of the Agencies, including their staff, in any way. Although the Merger Guidelines identify the factors and frameworks the Agencies consider when investigating mergers, the Agencies' enforcement decisions will necessarily continue to require prosecutorial discretion and judgment. Because the specific standards set forth in these Merger Guidelines will be applied to a broad range of factual circumstances, the Agencies will apply them reasonably and flexibly to the specific facts and circumstances of each merger.

Similarly, the factors contemplated in these Merger Guidelines neither dictate nor exhaust the range of theories or evidence that the Agencies may introduce in merger litigation. Instead, they set forth various methods of analysis that may be applicable depending on the availability and/or reliability of information related to a given market or transaction. Given the variety of industries, market participants, and acquisitions that the Agencies encounter, merger analysis does not consist of uniform application of a single methodology. The Agencies assess any relevant and meaningful evidence to evaluate whether the effect of a merger may be substantially to lessen competition or to tend to create a monopoly. Merger review is ultimately a fact-specific exercise. The Agencies follow the facts and the law in analyzing mergers as they do in other areas of law enforcement.

These Merger Guidelines include references to applicable legal precedent. References to court decisions do not necessarily suggest that the Agencies would analyze the facts in those cases identically today. While the Agencies adapt their analytical tools as they evolve and advance, legal holdings reflecting the Supreme Court's interpretation of a statute apply unless subsequently modified. These Merger Guidelines therefore reference applicable propositions of law to explain core principles that the Agencies apply in a manner consistent with modern analytical tools and market realities. References herein do not constrain the Agencies' interpretation of the law in particular cases, as the Agencies will apply their discretion with respect to the applicable law in each case in light of the full range of precedent pertinent to the issues raised by each enforcement action.

2. Applying the Merger Guidelines

This section discusses the frameworks the Agencies use to assess whether a merger may substantially lessen competition or tend to create a monopoly.

2.1. Guideline 1: Mergers Raise a Presumption of Illegality When They Significantly Increase Concentration in a Highly Concentrated Market.

Market concentration and the change in concentration due to the merger are often useful indicators of a merger's risk of substantially lessening competition. In highly concentrated markets, a merger that eliminates a significant competitor creates significant risk that the merger may substantially lessen competition or tend to create a monopoly. As a result, a significant increase in concentration in a highly concentrated market can indicate that a merger may substantially lessen competition, depriving the public of the benefits of competition.

The Supreme Court has endorsed this view and held that “a merger which produces a firm controlling an undue percentage share of the relevant market, and results in a significant increase in the concentration of firms in that market[,] is so inherently likely to lessen competition substantially that it must be enjoined in the absence of [rebuttal] evidence.”⁹ In the Agencies' experience, this legal presumption provides a highly administrable and useful tool for identifying mergers that may substantially lessen competition.

An analysis of concentration involves calculating pre-merger market shares of products¹⁰ within a relevant market (see Section 4.3 for a discussion of market definition and Section 4.4 for more details on computing market shares). The Agencies assess whether the merger creates or further consolidates a highly concentrated market and whether the increase in concentration is sufficient to indicate that the merger may substantially lessen competition or tend to create a monopoly.¹¹

The Agencies generally measure concentration levels using the Herfindahl-Hirschman Index (“HHI”).¹² The HHI is defined as the sum of the squares of the market shares; it is small when there are many small firms and grows larger as the market becomes more concentrated, reaching 10,000 in a market with a single firm. Markets with an HHI greater than 1,800 are highly concentrated, and a change of more than 100 points is a significant increase.¹³ A merger that creates or further consolidates a highly

⁹ *United States v. Phila. Nat'l Bank*, 374 U.S. 321, 363 (1963); *see, e.g., FTC v. v. Hackensack Meridian Health, Inc.*, 30 F.4th 160, 172-73 (3d Cir. 2022); *United States v. AT&T, Inc.*, 916 F.3d at 1032.

¹⁰ These Guidelines use the term “products” to encompass anything that is traded between firms and their suppliers, customers, or business partners, including physical goods, services, or access to assets. Products can be as narrow as an individual brand, a specific version of a product, or a product that includes specific ancillary services such as the right to return it without cause or delivery to the customer's location.

¹¹ Typically, a merger eliminates a competitor by bringing two market participants under common control. Similar concerns arise if the merger threatens to cause the exit of a current market participant, such as a leveraged buyout that puts the target firm at significant risk of failure.

¹² The Agencies may instead measure market concentration using the number of significant competitors in the market. This measure is most useful when there is a gap in market share between significant competitors and smaller rivals or when it is difficult to measure shares in the relevant market.

¹³ For illustration, the HHI for a market of five equal firms is 2,000 ($5 \times 20^2 = 2,000$) and for six equal firms is 1,667 ($6 \times 16.67^2 = 1667$).

concentrated market that involves an increase in the HHI of more than 100 points¹⁴ is presumed to substantially lessen competition or tend to create a monopoly.¹⁵ The Agencies also may examine the market share of the merged firm: a merger that creates a firm with a share over thirty percent is also presumed to substantially lessen competition or tend to create a monopoly if it also involves an increase in HHI of more than 100 points.¹⁶

Indicator	Threshold for Structural Presumption
Post-merger HHI	Market HHI greater than 1,800 AND Change in HHI greater than 100
Merged Firm's Market Share	Share greater than 30% AND Change in HHI greater than 100

When exceeded, these concentration metrics indicate that a merger's effect may be to eliminate substantial competition between the merging parties and may be to increase coordination among the remaining competitors after the merger. This presumption of illegality can be rebutted or disproved. The higher the concentration metrics over these thresholds, the greater the risk to competition suggested by this market structure analysis and the stronger the evidence needed to rebut or disprove it.

2.2. Guideline 2: Mergers Can Violate the Law When They Eliminate Substantial Competition Between Firms.

A merger eliminates competition between the merging firms by bringing them under joint control.¹⁷ If evidence demonstrates substantial competition between the merging parties prior to the

¹⁴ The change in HHI from a merger of firms with shares a and b is equal to $2ab$. For example, in a merger between a firm with 20% market share and a firm with 5% market share, the change in HHI is $2 \times 20 \times 5 = 200$.

¹⁵ The first merger guidelines to reference an HHI threshold were the merger guidelines issued in 1982. These guidelines referred to mergers with HHI above 1,000 as concentrated markets, with HHI between 1,000 and 1,800 as "moderately concentrated" and above 1,800 as "highly concentrated," while they referred to an increase in HHI of 100 as a "significant increase." Each subsequent iteration until 2010 maintained those thresholds. *See* Fed. Trade Comm'n & U.S. Dep't of Justice, Horizontal Merger Guidelines § 1.51 (1997); Fed. Trade Comm'n & U.S. Dep't of Justice, Horizontal Merger Guidelines § 1.51 (1992); U.S. Dep't of Justice, Merger Guidelines § 3(A) (1982). During this time, courts routinely cited to the guidelines and these HHI thresholds in decisions. *See, e.g., Chicago Bridge & Iron Co. N.V. v. FTC*, 534 F.3d 410, 431 (5th Cir. 2008); *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 716 (D.C. Cir. 2001); *FTC v. Univ. Health, Inc.*, 938 F.2d 1206, 1211 (11th Cir. 1991). Although the Agencies raised the thresholds for the 2010 guidelines, based on experience and evidence developed since, the Agencies consider the original HHI thresholds to better reflect both the law and the risks of competitive harm suggested by market structure and have therefore returned to those thresholds.

¹⁶ *Phila. Nat'l Bank*, 374 U.S. at 364-65 ("Without attempting to specify the smallest market share which would still be considered to threaten undue concentration, we are clear that 30% presents that threat.").

¹⁷ The competitive harm from the elimination of competition between the merging firms, without considering the risk of coordination, is sometimes referred to as unilateral effects. The elimination of competition between the merging firms can also lessen competition with and among other competitors. When the elimination of competition between the merging firms

merger, that ordinarily suggests that the merger may substantially lessen competition.¹⁸ Although a change in market structure can also indicate risk of competitive harm (see Guideline 1), an analysis of the existing competition between the merging firms can demonstrate that a merger threatens competitive harm independent from an analysis of market shares.

Competition often involves firms trying to win business by offering lower prices, new or better products and services, more attractive features, higher wages, improved benefits, or better terms relating to various additional dimensions of competition. This can include competition to research and develop products or services, and the elimination of such competition may result in harm even if such products or services are not yet commercially available. The more the merging parties have shaped one another's behavior, or have affected one another's sales, profits, valuation, or other drivers of behavior, the more significant the competition between them.

The Agencies examine a variety of indicators to identify substantial competition. For example:

Strategic Deliberations or Decisions. The Agencies may analyze the extent of competition between the merging firms by examining evidence relating to strategic deliberations or decisions in the regular course of business. For example, in some markets, the firms may monitor each other's pricing, marketing campaigns, facility locations, improvements, products, capacity, output, input costs, and/or innovation plans. This can provide evidence of competition between the merging firms, especially when they react by taking steps to preserve or enhance the competitiveness or profitability of their own products or services.

Prior Merger, Entry, and Exit Events. The Agencies may look to historical events to assess the presence and substantiality of direct competition between the merging firms. For example, the Agencies may examine the competitive impact of recent relevant mergers, entry, expansion, or exit events.

Customer Substitution. Customers' willingness to switch between different firms' products is an important part of the competitive process. Firms are closer competitors the more that customers are willing to switch between their products. The Agencies use a variety of tools, detailed in Section 4.2, to assess customer substitution.

Impact of Competitive Actions on Rivals. When one firm takes competitive actions to attract customers, this can benefit the firm at the expense of its rivals. The Agencies may gauge the extent of competition between the merging firms by considering the impact that competitive actions by one of the merging firms has on the other merging firm. The impact of a firm's competitive actions on a rival is generally greater when customers consider the firm's products and the rival's products to be closer substitutes, so that a firm's competitive action results in greater lost sales for the rival, and when the profitability of the rival's lost sales is greater.

Impact of Eliminating Competition Between the Firms. In some instances, evidence may be available to assess the impact of competition from one firm on the other's actions, such as firm choices

leads them to compete less aggressively with one another, other firms in the market can in turn compete less aggressively, decreasing the overall intensity of competition.

¹⁸ See also *United States v. First Nat'l Bank & Trust Co. of Lexington*, 376 U.S. 665, 669-70 (1964) (per curiam) ("[I]t [is] clear that the elimination of significant competition between [merging parties] constitutes an unreasonable restraint of trade in violation of § 1 of the Sherman Act. . . . It [can be] enough that the two . . . compete[], that their competition [is] not insubstantial and that the combination [would] put an end to it."); *ProMedica Health Sys., Inc. v. FTC*, 749 F.3d 559, 568-70 (6th Cir. 2014), *cert. denied*, 575 U.S. 996 (2015).

about price, quality, wages, or another dimension of competition. Section 4.2 describes a variety of approaches to measuring such impacts.

Additional Evidence, Tools, and Metrics. The Agencies may use additional evidence, tools, and metrics to assess the loss of competition between the firms. Depending on the realities of the market, different evidence, tools, or metrics may be appropriate.

Section 4.2 provides additional detail about the approaches that the Agencies use to assess competition between or among firms.

2.3. Guideline 3: Mergers Can Violate the Law When They Increase the Risk of Coordination.

The Agencies determine that a merger may substantially lessen competition when it meaningfully increases the risk of coordination among the remaining firms in a relevant market or makes existing coordination more stable or effective.¹⁹ Firms can coordinate across any or all dimensions of competition, such as price, product features, customers, wages, benefits, or geography. Coordination among rivals lessens competition whether it occurs explicitly—through collusive agreements between competitors not to compete or to compete less—or tacitly, through observation and response to rivals. Because tacit coordination often cannot be addressed under Section 1 of the Sherman Act, the Agencies vigorously enforce Section 7 of the Clayton Act to prevent market structures conducive to such coordination.

Tacit coordination can lessen competition even when it does not rise to the level of an agreement and would not itself violate the law. For example, in a concentrated market a firm may forego or soften an aggressive competitive action because it anticipates rivals responding in kind. This harmful behavior is more common the more concentrated markets become, as it is easier to predict the reactions of rivals when there are fewer of them.

To assess the extent to which a merger may increase the likelihood, stability, or effectiveness of coordination, the Agencies often consider three primary factors and several secondary factors. The Agencies may consider additional factors depending on the market.

2.3.A. Primary Factors

The Agencies may conclude that post-merger market conditions are susceptible to coordinated interaction and that the merger materially increases the risk of coordination if any of the three primary factors are present.

Highly Concentrated Market. By reducing the number of firms in a market, a merger increases the risk of coordination. The fewer the number of competitively meaningful rivals prior to the merger, the greater the likelihood that merging two competitors will facilitate coordination. Markets that are highly concentrated after a merger that significantly increases concentration (see Guideline 1) are presumptively susceptible to coordination. If merging parties assert that a highly concentrated market is not susceptible to coordination, the Agencies will assess this rebuttal evidence using the framework

¹⁹ See *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 229-30 (1993) (“In the § 7 context, it has long been settled that excessive concentration, and the oligopolistic price coordination it portends, may be the injury to competition the Act prohibits.”).

described below. Where a market is not highly concentrated, the Agencies may still consider other risk factors.

Prior Actual or Attempted Attempts to Coordinate. Evidence that firms representing a substantial share in the relevant market appear to have previously engaged in express or tacit coordination to lessen competition is highly informative as to the market's susceptibility to coordination. Evidence of failed attempts at coordination in the relevant market suggest that successful coordination was not so difficult as to deter attempts, and a merger reducing the number of rivals may tend to make success more likely.

Elimination of a Maverick. A maverick is a firm with a disruptive presence in a market. The presence of a maverick, however, only reduces the risk of coordination so long as the maverick retains the disruptive incentives that drive its behavior. A merger that eliminates a maverick or significantly changes its incentives increases the susceptibility to coordination.

2.3.B. Secondary Factors

The Agencies also examine whether secondary factors demonstrate that a merger may meaningfully increase the risk of coordination, even absent the primary risk factors. Not all secondary factors must be present for a market to be susceptible to coordination.

Market Concentration. Even in markets that are not highly concentrated, coordination becomes more likely as concentration increases. The more concentrated a market, the more likely the Agencies are to conclude that the market structure suggests susceptibility to coordination.

Market Observability. A market is more susceptible to coordination if a firm's behavior can be promptly and easily observed by its rivals. Rivals' behavior is more easily observed when the terms offered to customers are readily discernible and relatively observable (that is, known to rivals). Observability can refer to the ability to observe prices, terms, the identities of the firms serving particular customers, or any other competitive actions of other firms. Information exchange arrangements among market participants, such as public exchange of information through announcements or private exchanges through trade associations or publications, increase market observability. Regular monitoring of one another's prices or customers can indicate that the terms offered to customers are relatively observable. Pricing algorithms, programmatic pricing software or services, and other analytical or surveillance tools that track or predict competitor prices or actions likewise can increase the observability of the market.

Competitive Responses. A market is more susceptible to coordination if a firm's prospective competitive reward from attracting customers away from its rivals will be significantly diminished by its rivals' likely responses. This is more likely to be the case the stronger and faster the responses from its rivals because such responses reduce the benefits of competing more aggressively. Some factors that increase the likelihood of strong or rapid responses by rivals include: (1) the market has few significant competitors, (2) products in the relevant market are relatively homogeneous, (3) customers find it relatively easy to switch between suppliers, (4) suppliers use algorithmic pricing, or (5) suppliers use meeting-competition clauses. The more predictable are rivals' responses to strategic actions or changing competitive conditions, and the more interactions firms have across multiple markets, the greater the susceptibility to coordination.

Aligned Incentives. Removing a firm that has different incentives from most other firms in a market can increase the risk of coordination. For example, a firm with a small market share may have

less incentive to coordinate because it has more to gain from winning new business than other firms. The same issue can arise when a merger more closely aligns one or both merging firms' incentives with the other firms in the market. In some cases, incentives might be aligned or strengthened when firms compete with one another in multiple markets ("multi-market contact"). For example, firms might compete less aggressively in some markets in anticipation of reciprocity by rivals in other markets. The Agencies examine these and any other market realities that suggest aligned incentives increase susceptibility to coordination.

Profitability or Other Advantages of Coordination for Rivals. The Agencies regard coordinated interaction as more likely to occur when participants in the market stand to gain more from successful coordination. Coordination generally is more profitable or otherwise advantageous for the coordinating firms the less often customers substitute outside the market when firms offer worse terms.

Rebuttal Based on Structural Barriers to Coordination Unique to the Industry. When market structure evidence suggests that a merger may substantially lessen competition through coordination, the merging parties sometimes argue that anticompetitive coordination is nonetheless impossible due to structural market barriers to coordinating. The Agencies consider this rebuttal evidence using the framework in Section 3. In so doing, the Agencies consider whether structural market barriers to coordination are "so much greater in the [relevant] industry than in other industries that they rebut the normal presumption" of coordinated effects.²⁰ In the Agencies' experience, structural conditions that prevent coordination are exceedingly rare in the modern economy. For example, coordination is more difficult when firms are unable to observe rivals' competitive offerings, but technological change has made this situation less common than in the past and reduced many traditional barriers or obstacles to observing the behavior of rivals in a market. The greater the level of concentration in the relevant market, the greater must be the structural barriers to coordination in order to show that no substantial lessening of competition is threatened.

2.4. Guideline 4: Mergers Can Violate the Law When They Eliminate a Potential Entrant in a Concentrated Market.

Mergers can substantially lessen competition by eliminating a potential entrant. For instance, a merger can eliminate the possibility that entry or expansion by one or both firms would have resulted in new or increased competition in the market in the future. A merger can also eliminate current competitive pressure exerted on other market participants by the mere perception that one of the firms might enter. Both of these risks can be present simultaneously.

A merger that eliminates a potential entrant into a concentrated market can substantially lessen competition or tend to create a monopoly.²¹ The more concentrated the market, the greater the magnitude of harm to competition from any lost potential entry and the greater the tendency to create a monopoly. Accordingly, for mergers involving one or more potential entrants, the higher the market concentration, the lower the probability of entry that gives rise to concern.

²⁰ See *H.J. Heinz Co.*, 246 F.3d at 724.

²¹ *United States v. Marine Bancorp.*, 418 U.S. 602, 630 (1974). A concentrated market is one with an HHI greater than 1,000 (See Guideline 1, n.15).

2.4.A. Actual Potential Competition: Eliminating Reasonably Probable Future Entry

In general, expansion into a concentrated market via internal growth rather than via acquisition benefits competition.²² Merging a current and a potential market participant eliminates the possibility that the potential entrant would have entered on its own—entry that, had it occurred, would have provided a new source of competition in a concentrated market.

To determine whether an acquisition that eliminates a potential entrant into a concentrated market may substantially lessen competition,²³ the Agencies examine (1) whether one or both²⁴ of the merging firms had a reasonable probability of entering the relevant market other than through an anticompetitive merger, and (2) whether such entry offered a substantial likelihood of ultimately producing deconcentration of the market or other significant procompetitive effects.²⁵

Reasonable Probability of Entry. The Agencies’ starting point for assessment of a reasonable probability of entry is objective evidence regarding the firm’s available feasible means of entry, including its capabilities and incentives. Relevant objective evidence can include, for example, evidence that the firm has sufficient size and resources to enter; evidence of any advantages that would make the firm well-situated to enter; evidence that the firm has successfully expanded into similarly situated markets in the past or already participates in adjacent or related markets; evidence that the firm has an incentive to enter; or evidence that industry participants recognize the company as a potential entrant. This analysis is not limited to whether the company could enter with its pre-merger production facilities, but also considers overall capability, which can include the ability to expand or add to its capabilities on its own or in collaboration with someone other than the acquisition target.

Subjective evidence that the company considered entering absent the merger can also indicate a reasonable probability that the company would have entered without the merger. Subjective evidence that the company considered organic entry as an alternative to merging generally suggests that, absent the merger, entry would be reasonably probable.

Likelihood of Deconcentration or Other Significant Procompetitive Effects. New entry can yield a variety of procompetitive effects, including increased output or investment, higher wages or improved working conditions, greater innovation, higher quality, and lower prices. If the merging firm had a reasonable probability of entering a highly concentrated relevant market, this suggests benefits that would have resulted from its entry would be competitively significant, unless there is substantial direct evidence that the competitive effect would be *de minimis*. To supplement the suggestion that new entry yields procompetitive effects, the Agencies will consider projections of the potential entrant’s

²² See *Ford Motor Co. v. United States*, 405 U.S. 562, 587 (1972) (referring to the “typical[]” competitive concern when “a potential entrant enters an oligopolistic market by acquisition rather than internal expansion” as being “that such a move has deprived the market of the pro-competitive effect of an increase in the number of competitors”).

²³ Harm from the elimination of a potential entrant can occur in markets that do not yet consist of commercial products, even if the market concentration of the future market cannot be measured using traditional means. Where there are few equivalent potential entrants, including one or both of the merging firms, that indicates that the future market, once commercialized, will be concentrated. The Agencies will consider other potential entrants’ capabilities and incentives in comparison to the merging potential entrant to assess equivalence.

²⁴ *United States v. Penn-Olin Chemical Co.*, 378 U.S. 158 (1964) (holding that a merger between two firms, each or both of which might have entered the relevant market, could violate Section 7).

²⁵ See *id.* at 175-76; *Marine Bancorp.*, 418 U.S. at 622, 633 (“[T]he proscription expressed in § 7 against mergers ‘when a “tendency” toward monopoly or [a] “reasonable likelihood” of a substantial lessening of competition in the relevant market is shown’ applies alike to actual- and potential-competition cases.” (quoting *Penn-Olin*, 378 U.S. at 171)); see also *Yamaha Motor Co. v. FTC*, 657 F.2d 971, 980-981 (8th Cir. 1981) (acquisition of potential entrant violated Section 7).

competitive significance, such as market share, its business strategy, the anticipated response of competitors, or customer preferences or interest.

A merger of two potential entrants can also result in a substantial lessening of competition. The merger need not involve a firm that has a commercialized product in the market or an existing presence in the same geographic market. The Agencies analyze similarly mergers between two potential entrants and those involving a current market participant and a potential entrant.

2.4.B. Perceived Potential Competition: Lessening of Current Competitive Pressure

A perceived potential entrant can stimulate competition among incumbents. That pressure can prompt current market participants to make investments, expand output, raise wages, increase product quality, lower product prices, or take other procompetitive actions. The acquisition of a firm that is perceived by market participants as a potential entrant can substantially lessen competition by eliminating or relieving competitive pressure.

To assess whether the acquisition of a perceived potential entrant may substantially lessen competition, the Agencies consider whether a current market participant could reasonably consider one of the merging companies to be a potential entrant and whether that potential entrant has a likely influence on existing competition.²⁶

Market Participant Could Reasonably Consider a Firm to Be a Potential Entrant. The starting point for this analysis is evidence regarding the company's capability of entering or applying competitive pressure. Objective evidence is highly probative and includes evidence of feasible means of entry or communications by the company indicating plans to expand or reallocate resources in a way that could increase competition in the relevant market. Objective evidence can be sufficient to find that the firm is a potential entrant; it need not be accompanied by any subjective evidence of current market participants' internal perceptions or direct evidence of strategic reactions to the potential entrant. If such evidence is available, it can weigh in favor of finding that a current market participant could reasonably consider the firm to be a potential entrant.

Likely Influence on Existing Rivals. Direct evidence that the firm's presence or behavior has affected or is affecting current market participants' strategic decisions is not necessary but can establish a showing of a likely influence. Even without such direct evidence, circumstantial evidence that the firm's presence or behavior had an effect on the competitive reactions of firms in the market may also show likely influence. Objective evidence establishing that a current market participant could reasonably consider one of the merging firms to be a potential entrant can also establish that the firm has a likely influence on existing market participants. Subjective evidence indicating that current market participants—including, for example, customers, suppliers, or distributors—internally perceive the merging firm to be a potential entrant can also establish a likely influence.

2.4.C. Distinguishing Potential Entry from Entry as Rebuttal

When evaluating a potentially unlawful merger of current competitors, the Agencies will assess whether entry by other firms would be timely, likely, and sufficient to replace the lost competition using the standards discussed in Section 3.2. The existence of a perceived or actual potential entrant may not meet that standard when considering a merger between firms that already participate in the relevant market. The competitive impact of perceived and actual potential entrants is typically attenuated

²⁶ See *United States v. Falstaff Brewing Corp.*, 410 U.S. 526, 533-36 (1973); *Marine Bancorp.*, 418 U.S. at 624-25.

compared to competition between two current market participants. However, because concentrated markets often lack robust competition, the loss of even an attenuated source of competition such as a potential entrant may substantially lessen competition in such markets. Moreover, because the Agencies seek to prevent threats to competition in their incipiency, the likelihood of potential entry that could establish that a merger's effect "may be" to substantially lessen competition will generally not equal the likelihood of entry that would rebut a demonstrated risk that competition may be substantially lessened.

2.5. Guideline 5: Mergers Can Violate the Law When They Create a Firm that May Limit Access to Products or Services That Its Rivals Use to Compete.

The Agencies evaluate whether a merger may substantially lessen competition when the merged firm can limit access to a product, service, or route to market²⁷ that its rivals may use to compete. Mergers involving products or services rivals may use to compete can threaten competition in several ways, for example: (A) the merged firm could limit rivals' access to the products or services, thereby weakening or excluding them, lessening competition; (B) the merged firm may gain or increase access to rivals' competitively sensitive information, thereby facilitating coordination or undermining their incentives to compete; or (C) the threat of limited access can deter rivals and potential rivals from investing.

These problems can arise from mergers involving access to any products, services, or routes to market that rivals use to compete, and that are competitively significant to those rivals, whether or not they involve a traditional vertical relationship such as a supplier and distributor relationship. Many types of related products can implicate these concerns, including products rivals currently or may in the future use as inputs, products that provide distribution services for rivals or otherwise influence customers' purchase decisions, products that provide or increase the merged firm's access to competitively sensitive information about its rivals, or complements that increase the value of rivals' products. Even if the related product is not currently being used by rivals, it might be competitively significant because, for example, its availability enables rivals to obtain better terms from other providers in negotiations. The Agencies refer to any product, service, or route to market that rivals use to compete in that market as a "related product."

The Agencies analyze competitive effects in the relevant market in which the merged firm competes with rivals that use the related product. The Agencies do not always define a market around the related product, although they may do so (see Section 2.5.A.2).

2.5.A. The Risk that the Merged Firm May Limit Access

A merger involving products, services, or routes to market that rivals use to compete may substantially lessen competition when the merged firm has both the ability and incentive to limit access to the related product so as to weaken or exclude some of its rivals (the "dependent" rivals) in the relevant market.

The merged firm could limit access to the related product in different ways. It could deny rivals access altogether, deny access to some features, degrade its quality, worsen the terms on which rivals

²⁷ A "route to market" refers to any way a firm accesses its trading partners, such as distribution channels, marketplaces, or customers.

can access the related product, limit interoperability, degrade the quality of complements, provide less reliable access, tie up or obstruct routes to market, or delay access to product features, improvements, or information relevant to making efficient use of the product. All these ways of limiting access are sometimes referred to as “foreclosure.”²⁸

Dependent rivals can be weakened if limiting their access to the related product would make it harder or more costly for them to compete; for example, if it would lead them to charge higher prices or offer worse terms in the relevant market, reduce the quality of their products so that they were less attractive to trading partners, or interfere with distribution so that those products were less readily available. Competition can also be weakened if the merger facilitates coordination among the merged firm and its rivals, for example by giving the merged firm the ability to threaten to limit access to uncooperative rivals.

Rivals or potential rivals may be excluded from the relevant market if limiting their access to the related product could lead them to exit the market or could deter them from entering. For example, potential rivals may not enter if the merged firm ties up or obstructs so many routes to market that the remaining addressable market is too small. Exclusion can arise when a new entrant would need to invest not only in entering the relevant market, but also in supplying its own substitute for the related product, sometimes referred to as two-stage entry or multi-level entry.

Because the merged firm could use its ability to limit access to the related product in a range of ways, the Agencies focus on the overall risk that the merged firm will do so, and do not necessarily identify which precise actions the merged firm would take to lessen competition.

2.5.A.1. Ability and Incentive to Foreclose Rivals

The Agencies assess the merged firm’s ability and incentive to substantially lessen competition by limiting access to the related product for a group of dependent rivals in the relevant market by examining four factors.

1. Availability of Substitutes. The Agencies assess the availability of substitutes for the related product. The merged firm is more able to limit access when there are few alternative options to the merged firm’s related product, if these alternatives are differentiated in quality, price, or other characteristics, or if competition to supply them is limited.

2. Competitive Significance of the Related Product. The Agencies consider how important the related product is for the dependent firms and the extent to which they would be weakened or excluded from the relevant market if their access was limited.

3. Effect on Competition in the Relevant Market. The Agencies assess the importance of the dependent firms for competition in the relevant market. Competition can be particularly affected when the dependent firms would be excluded from the market altogether.

4. Competition Between the Merged Firm and the Dependent Firms. The merged firm’s incentive to limit the dependent firms’ access depends on how strongly it competes with them. If the dependent firms are close competitors, the merged firm may benefit from higher sales or prices in the relevant market when it limits their access. The Agencies may also assess the potential for the merged

²⁸ See *Illumina, Inc. v. FTC*, No. 23-60167, slip op. at 17 (5th Cir. Dec. 15, 2023) (“[T]here are myriad ways in which [the merged firm] could engage in foreclosing behavior . . . such as by making late deliveries or subtly reducing the level of support services.”).

firm to benefit from facilitating coordination by threatening to limit dependent rivals' access to the related product. These benefits can make it profitable to limit access to the related product and thereby substantially lessen competition, even though it would not have been profitable for the firm that controlled the related product prior to the merger.

The Agencies assess the extent of competition with rivals and the risk of coordination using analogous methods to the ones described in Guidelines 2 and 3, and Section 4.2.

* * *

In addition to the evidentiary, analytical, and economic tools in Section 4, the following additional considerations and evidence may be important to this assessment:

Barriers to Entry and Exclusion of Rivals. The merged firm may benefit more from limiting access to dependent rivals or potential rivals when doing so excludes them from the market, for example by creating a need for the firm to enter at multiple levels and to do so with sufficient scale and scope (multi-level entry).

Prior Transactions or Prior Actions. If firms used prior acquisitions or engaged in prior actions to limit rivals' access to the related product, or other products its rivals use to compete, that suggests that the merged firm has the ability and incentive to do so. However, lack of past action does not necessarily indicate a lack of incentive in the present transaction because the merger can increase the incentive to foreclose.

Internal Documents. Information from business planning and merger analysis documents prepared by the merging firms might identify instances where the firms believe they have the ability and incentive to limit rivals' access. Such documents, where available, are highly probative. The lack of such documents, however, is less informative.

Market Structure. Evidence of market structure can be informative about the availability of substitutes for the related product and the competition in the market for the related product or the relevant market. (See Section 2.5.A.2)

2.5.A.2. *Analysis of Industry Factors and Market Structure*

The Agencies also sometimes determine, based on an analysis of factors related to market structure, that a merger may substantially lessen competition by allowing the merged firm to limit access to a related product.²⁹ The Agencies' assessment can include evidence about the structure, history, and probable future of the market.

Structure of the Related Market. In some cases, the market structure of the related product market can give an indication of the merged firm's ability to limit access to the related product. In these cases, the Agencies define a market (termed the "related market") around the related product (see Section 4.3). The Agencies then define the "foreclosure share" as the share of the related market to which the merged firm could limit access. If the share or other evidence show that the merged firm is

²⁹ See *Brown Shoe*, 370 U.S. at 328-34; *Illumina*, slip op. at 20-22 ("There is no precise formula when it comes to applying these factors. Indeed, the Supreme Court has found a vertical merger unlawful by examining only three of the *Brown Shoe* factors." (cleaned up)); *Fruehauf Corp. v. FTC*, 603 F.2d 345, 353 (2d Cir. 1979); *U.S. Steel Corp. v. FTC*, 426 F.2d 592, 599 (6th Cir. 1970).

approaching or has monopoly power over the related product, and the related product is competitively significant, those factors alone are a sufficient basis to demonstrate that the dependent firms do not have adequate substitutes and the merged firm has the ability to weaken or exclude them by limiting their access to the related product. (See Considerations 1 and 2 in Section 2.5.A.1).³⁰

Structure of the Relevant Market. Limiting rivals' access to the related product will generally have a greater effect on competition in the relevant market if the merged firm and the dependent rivals face less competition from other firms. In addition, the merged firm has a greater incentive to limit access to the dependent firms when it competes more closely with them. Market share and concentration measures for the merged firm, the dependent rivals, and the other firms, can sometimes provide evidence about both issues.

Nature and Purpose of the Merger. When the nature and purpose of the merger is to foreclose rivals, including by raising their costs, that suggests the merged firm is likely to foreclose rivals.

Trend Toward Vertical Integration. The Agencies will generally consider evidence about the degree of integration between firms in the relevant and related markets, as well as whether there is a trend toward further vertical integration and how that trend or the factors driving it may affect competition. A trend toward vertical integration may be shown through, for example: a pattern of vertical integration following mergers by one or both of the merging companies; or evidence that a merger was motivated by a desire to avoid having its access limited due to similar transactions among other companies that occurred or may occur in the future.

* * *

If the parties offer rebuttal evidence, the Agencies will assess it under the approach laid out in Section 3.³¹ When assessing rebuttal evidence focused on the reduced profits of the merged firm from limiting access from rivals, the Agencies examine whether the reduction in profits would prevent the full range of reasonably probable strategies to limit access. When evaluating whether this rebuttal evidence is sufficient to conclude that no substantial lessening of competition is threatened by the merger, the Agencies will give little weight to claims that are not supported by an objective analysis, including, for example, speculative claims about reputational harms. Moreover, the Agencies are unlikely to credit claims or commitments to protect or otherwise avoid weakening the merged firm's rivals that do not align with the firm's incentives. The Agencies' assessment will be consistent with the principle that firms act to maximize their overall profits and valuation rather than the profits of any particular business

³⁰ See *Brown Shoe*, 370 U.S. at 328 ("If the share of the market foreclosed is so large that it approaches monopoly proportions, the Clayton Act will, of course, have been violated . . ."). The Agencies will generally infer, in the absence of countervailing evidence, that the merging firm has or is approaching monopoly power in the related product if it has a share greater than 50% of the related product market. A merger involving a related product with share of less than 50% may still substantially lessen competition, particularly when that related product is important to its trading partners.

³¹ A common rebuttal argument is that the merger would lead to vertical integration of complementary products and as a result, "eliminate double marginalization," since in specific circumstances such a merger can confer on the merged firm an incentive to decrease prices to purchasers. The Agencies examine whether elimination of double marginalization satisfies the approach to evaluating procompetitive efficiencies in Section 3.3, including examining: (a) whether the merged firm will be more vertically integrated as a result of the merger, for example because it increases the extent to which it uses internal production of an input when producing output for the relevant market; (b) whether contracts short of a merger have eliminated or could eliminate double marginalization such that it would not be merger-specific, and (c) whether the merged firm has the incentive to reduce price in the relevant market given that such a reduction would reduce sales by the merged firm's rivals in the relevant market, which would in turn lead to reduced revenue and margin on sales of the related product to the dependent rivals.

unit. A merger may substantially lessen competition or tend to create a monopoly regardless of the claimed intent of the merging companies or their executives. (See Section 4.1)

If the merged firm has the ability and incentive to limit access to the related product and lessen competition in the relevant market, there are many ways it could act on those incentives. The merging parties may put forward evidence that there are no reasonably probable ways in which they could profitably limit access to the related product and thereby make it harder for rivals to compete, or that the merged firm will be more competitive because of the merger.

2.5.B. Mergers Involving Visibility into Rivals' Competitively Sensitive Information

If rivals would continue to access or purchase a related product controlled by the merged firm post-merger, the merger can substantially lessen competition if the merged firm would gain or increase visibility into rivals' competitively sensitive information. This situation could arise in many settings, including, for example, if the merged firm learns about rivals' sales volumes or projections from supplying an input or a complementary product; if it learns about promotion plans and anticipated product improvements or innovations from its role as a distributor; or if it learns about entry plans from discussions with potential rivals about compatibility or interoperability with a complementary product it controls. A merger that gives the merged firm increased visibility into competitively sensitive information could undermine rivals' ability or incentive to compete aggressively or could facilitate coordination.

Undermining Competition. The merged firm might use visibility into a rival's competitively sensitive information to undermine competition from the rival. For example, the merged firm's ability to preempt, appropriate, or otherwise undermine the rival's procompetitive actions can discourage the rival from fully pursuing competitive opportunities. Relatedly, rivals might refrain from doing business with the merged firm rather than risk that the merged firm would use their competitively sensitive business information to undercut them. Those rivals might become less-effective competitors if they must rely on less-preferred trading partners or accept less favorable trading terms because their outside options have worsened or are more limited.

Facilitating Coordination. A merger that provides access to rivals' competitively sensitive information might facilitate coordinated interaction among firms in the relevant market by allowing the merged firm to observe its rivals' competitive strategies faster and more confidently. (See Guideline 3.)

2.5.C. Mergers that Threaten to Limit Rivals' Access and Thereby Create Barriers to Entry and Competition

When a merger gives a firm the ability and incentive to limit rivals' access, or where it gives the merged firm increased visibility into its rivals' competitively sensitive information, the merger may create entry barriers as described above. In addition, the merged firm's rivals might change their behavior because of the risk that the merged firm could limit their access. That is, the risk that the merger will give a firm the ability and incentive to limit rivals' access or will give the merged firm increased visibility into sensitive information can dissuade rivals from entering the market or expanding their operations.

Rivals or potential rivals that face the threat of foreclosure, or the risk of sharing sensitive information with rivals, may reduce investment or adjust their business strategies in ways that lessen competition. Firms may be reluctant to invest in a market if their success is dependent on continued supply from a rival, particularly because the merged firm may become more likely to foreclose its

competitor as that competitor becomes more successful. Firms may use expensive strategies to try to reduce their dependence on the merged firm, weakening the competitiveness of their products and services. Even if the merged firm does not deliberately seek to weaken rivals, rivals or potential rivals may fear that their access will be limited if the merged firm decides to use its own products exclusively. These effects may occur irrespective of the merged firm's incentive to limit access and are greater as the merged firm gains greater control over more important inputs that those rivals use to compete.

2.6. Guideline 6: Mergers Can Violate the Law When They Entrench or Extend a Dominant Position.

The Agencies consider whether a merger may entrench or extend an already dominant position. The effect of such mergers “may be substantially to lessen competition” or “may be . . . to tend to create a monopoly” in violation of Section 7 of the Clayton Act. Indeed, the Supreme Court has explained that a merger involving an “already dominant[] firm may substantially reduce the competitive structure of the industry by raising entry barriers.”³² The Agencies also evaluate whether the merger may extend that dominant position into new markets.³³ Mergers that entrench or extend a dominant position can also violate Section 2 of the Sherman Act.³⁴ At the same time, the Agencies distinguish anticompetitive entrenchment from growth or development as a consequence of increased competitive capabilities or incentives.³⁵ The Agencies therefore seek to prevent those mergers that would entrench or extend a dominant position through exclusionary conduct, weakening competitive constraints, or otherwise harming the competitive process.

To undertake this analysis, the Agencies first assess whether one of the merging firms has a dominant position based on direct evidence or market shares showing durable market power. For example, the persistence of market power can indicate that entry barriers exist, that further entrenchment may tend to create a monopoly, and that there would be substantial benefits from the emergence of new competitive constraints or disruptions. The Agencies consider mergers involving dominant firms in the context of evidence about the sources of that dominance, focusing on the extent to which the merger relates to, reinforces, or supplements these sources.

Creating or preserving dominance and the profits it brings can be an important motivation for a firm to undertake an acquisition as well as a driver of the merged firm's behavior after the acquisition. In particular, a firm may be willing to undertake costly short-term strategies in order to increase the chance that it can enjoy the longer-term benefits of dominance. A merger that creates or preserves dominance may also reduce the merged firm's longer-term incentives to improve its products and services.

A merger can result in durable market power and long-term harm to competition even when it initially provides short-term benefits to some market participants. Thus, the Agencies will consider not just the impact of the merger holding fixed factors like product quality and the behavior of other industry participants, but they may also consider the (often longer term) impact of the merger on market

³² *FTC v. Procter & Gamble Co.*, 386 U.S. 568, 577-578 (1967); *see, e.g., Fruehauf*, 603 F.2d at 353 (the “entrenchment of a large supplier or purchaser” can be an “essential” showing of a Section 7 violation).

³³ *Ford*, 405 U.S. at 571 (condemning acquisition by dominant firm to obtain a foothold in another market when coupled with incentive to create and maintain barriers to entry into that market).

³⁴ *See, e.g., United States v. Grinnell Corp.*, 384 U.S. 563 (1966) (acquisitions are among the types of conduct that may violate the Sherman Act).

³⁵ *See, e.g., id.* at 570-71.

power and industry dynamics. Important dynamic competitive effects can arise through the entry, investment, innovation, and terms offered by the merged firm and other industry participants, even when the Agencies cannot predict specific reactions and responses with precision. If the ultimate result of the merger is to protect or preserve dominance by limiting opportunities for rivals, reducing competitive constraints, or preventing competitive disruption, then the Agencies will approach the merger with a heightened degree of scrutiny. The degree of scrutiny and concern will increase in proportion to the strength and durability of the dominant firm's market power.

2.6.A. Entrenching a Dominant Position

Raising Barriers to Entry or Competition. A merger may create or enhance barriers to entry or expansion by rivals that limit the capabilities or competitive incentives of other firms. Barriers to entry can entrench a dominant position even if the nature of future entry is uncertain, if the identities of future entrants are unknown, or if there is more than one mechanism through which the merged firm might create entry barriers. Some examples of ways in which a merger may raise barriers to entry or competition include:

- ***Increasing Switching Costs.*** The costs associated with changing suppliers (often referred to as switching costs) can be an important barrier to competition. A merger may increase switching costs if it makes it more difficult for customers to switch away from the dominant firm's product or service, or when it gives the dominant firm control of something customers use to switch providers or of something that lowers the overall cost to customers of switching providers. For example, if a dominant firm merges with a complementary product that interoperates with the dominant firm's competitors, it could reduce interoperability, harming competition for customers who value the complement.
- ***Interfering With the Use of Competitive Alternatives.*** A dominant position may be threatened by a service that customers use to work with multiple providers of similar or overlapping bundles of products and services. If a dominant firm acquires a service that supports the use of multiple providers, it could degrade its utility or availability or could modify the service to steer customers to its own products, entrenching its dominant position. For example, a closed messaging communication service might acquire a product that allowed users to send and receive messages over several competing services through a single user interface, which facilitates competition. The Agencies would examine whether the acquisition would entrench the messaging service's market power by leading the merged firm to degrade the product or otherwise reduce its effectiveness as a cross-service tool, thus reducing competition.
- ***Depriving Rivals of Scale Economies or Network Effects.*** Scale economies and network effects can serve as a barrier to entry and competition. Depriving rivals of access to scale economies and network effects can therefore entrench a dominant position. If a merger enables a dominant firm to reduce would-be rivals' access to additional scale or customers by acquiring a product that affects access such as a customer acquisition channel, the merged firm can limit the ability of rivals to improve their own products and compete more effectively.³⁶ Limiting access by rivals to customers in the short run can lead to long run entrenchment of a dominant position and tend to create monopoly power.

³⁶ The Agencies' focus here is on the artificial acquisition of network participants that occurs directly as a result of the merger, as opposed to future network growth that may occur through competition on the merits.

For example, if two firms operate in a market in which network effects are significant but in which rivals voluntarily interconnect, their merger can create an entity with a large enough user base that it may have the incentive to end voluntary interconnection. Such a strategy can lessen competition and harm trading partners by creating or entrenching dominance in this market. This can be the case even if the merging firms did not appear to have a dominant position prior to the merger because their interoperability practices strengthened rivals.

Eliminating a Nascent Competitive Threat. A merger may involve a dominant firm acquiring a nascent competitive threat—namely, a firm that could grow into a significant rival, facilitate other rivals’ growth, or otherwise lead to a reduction in its power.³⁷ In some cases, the nascent threat may be a firm that provides a product or service similar to the acquiring firm that does not substantially constrain the acquiring firm at the time of the merger but has the potential to grow into a more significant rival in the future. In other cases, factors such as network effects, scale economies, or switching costs may make it extremely difficult for a new entrant to offer all of the product features or services at comparable quality and terms that an incumbent offers. The most likely successful threats in these situations can be firms that initially avoid directly entering the dominant firm’s market, instead specializing in (a) serving a narrow customer segment, (b) offering services that only partially overlap with those of the incumbent, or (c) serving an overlapping customer segment with distinct products or services.

Firms with niche or only partially overlapping products or customers can grow into longer-term threats to a dominant firm. Once established in its niche, a nascent threat may be able to add features or serve additional customer segments, growing into greater overlap of customer segments or features over time, thereby intensifying competition with the dominant firm. A nascent threat may also facilitate customers aggregating additional products and services from multiple providers that serve as a partial alternative to the incumbent’s offering. Thus, the success and independence of the nascent threat may both provide for a direct threat of competition by the niche or nascent firm and may facilitate competition or encourage entry by other, potentially complementary providers that may provide a partial competitive constraint. In this way, the nascent threat supports what may be referred to as “ecosystem” competition. In this context, ecosystem competition refers to a situation where an incumbent firm that offers a wide array of products and services may be partially constrained by other combinations of products and services from one or more providers, even if the business model of those competing services is different.

Nascent threats may be particularly likely to emerge during technological transitions. Technological transitions can render existing entry barriers less relevant, temporarily making incumbents susceptible to competitive threats. For example, technological transitions can create temporary opportunities for entrants to differentiate or expand their offerings based on their alignment with new technologies, enabling them to capture network effects that otherwise insulate incumbents from competition. A merger in this context may lessen competition by preventing or delaying any such beneficial shift or by shaping it so that the incumbent retains its dominant position. For example, a dominant firm might seek to acquire firms to help it reinforce or recreate entry barriers so that its dominance endures past the technological transition. Or it might seek to acquire nascent threats that might otherwise gain sufficient customers to overcome entry barriers. In evaluating the potential for entrenching dominance, the Agencies take particular care to preserve opportunities for more competitive markets to emerge during such technological shifts.

³⁷ The Agencies assess acquisitions of nascent competitive threats by non-dominant firms under the other Guidelines.

Separate from and in addition to its Section 7 analysis, the Agencies will consider whether the merger violates Section 2 of the Sherman Act. For example, under Section 2 of the Sherman Act, a firm that may challenge a monopolist may be characterized as a “nascent threat” even if the impending threat is uncertain and may take several years to materialize.³⁸ The Agencies assess whether the merger is reasonably capable of contributing significantly to the preservation of monopoly power in violation of Section 2, which turns on whether the acquired firm is a nascent competitive threat.³⁹

2.6.B. Extending a Dominant Position into Another Market

The Agencies also examine the risk that a merger could enable the merged firm to extend a dominant position from one market into a related market, thereby substantially lessening competition or tending to create a monopoly in the related market. For example, the merger might lead the merged firm to leverage its position by tying, bundling, conditioning, or otherwise linking sales of two products. A merger may also raise barriers to entry or competition in the related market, or eliminate a nascent competitive threat, as described above. For example, prior to a merger, a related market may be characterized by scale economies but still experience moderate levels of competition. If the merged firm takes actions to induce customers of the dominant firm’s product to also buy the related product from the merged firm, the merged firm may be able to gain dominance in the related market, which may be supported by increased barriers to entry or competition that result from the merger.

These concerns can arise notwithstanding that the acquiring firm already enjoys the benefits associated with its dominant position. The prospect of market power in the related market may strongly affect the merged firm’s incentives in a way that does not align with the interests of its trading partners, both in terms of strategies that create dominance for the related product and in the form of reduced incentives to invest in its products or provide attractive terms for them after dominance is attained. In some cases, the merger may also further entrench the firm’s original dominant position, for example if future competition requires the provision of both products.

* * *

If the merger raises concerns that its effect may be to entrench or extend a dominant position, then any claim that the merger also provides competitive benefits will be evaluated under the rebuttal framework in Section 3. For example, the framework of Section 3 would be used to evaluate claims that a merger would generate cost savings or quality improvements that would be passed through to make their products more competitive or would otherwise create incentives for the merged firm to offer better terms. The Agencies’ analysis will consider the fact that the incentives to pass through benefits to customers or offer attractive terms are affected by competition and the extent to which entry barriers insulate the merged firm from effective competition. It will also consider whether any claimed benefits are specific to the merger, or whether they could be instead achieved through contracting or other means.

³⁸ *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) (en banc) (per curiam).

³⁹ *See id.* at 79 (“[I]t would be inimical to the purpose of the Sherman Act to allow monopolists free reign to squash nascent, albeit unproven, competitors at will. . .”).

2.7. Guideline 7: When an Industry Undergoes a Trend Toward Consolidation, the Agencies Consider Whether It Increases the Risk a Merger May Substantially Lessen Competition or Tend to Create a Monopoly.

The recent history and likely trajectory of an industry can be an important consideration when assessing whether a merger presents a threat to competition. The Supreme Court has explained that “a trend toward concentration in an industry, whatever its causes, is a highly relevant factor in deciding how substantial the anticompetitive effect of a merger may be.”⁴⁰ It has also underscored that “Congress intended Section 7 to arrest anticompetitive tendencies in their incipiency.”⁴¹ The Agencies therefore examine whether a trend toward consolidation in an industry would heighten the competition concerns identified in Guidelines 1-6.

The Agencies therefore closely examine industry consolidation trends in applying the frameworks above. For example:

Trend Toward Concentration. If an industry has gone from having many competitors to becoming concentrated, it may suggest greater risk of harm, for example, because new entry may be less likely to replace or offset the lessening of competition the merger may cause. Among other implications, in the context of a trend toward concentration, the Agencies identify a stronger presumption of harm from undue concentration (see Guideline 1), and a greater risk of substantially lessening competition when a merger eliminates competition between the merging parties (see Guideline 2) or increases the risk of coordination (see Guideline 3).

Trend Toward Vertical Integration. The Agencies will generally consider evidence about the degree of integration between firms in the relevant and related markets and whether there is a trend toward further vertical integration. If a merger occurs amidst or furthers a trend toward vertical integration, the Agencies consider the implications for the competitive dynamics of the industry moving forward. For example, a trend toward vertical integration could magnify the concerns discussed in Guideline 5 by making entry at a single level more difficult and thereby preventing the emergence of new competitive threats over time.

Arms Race for Bargaining Leverage. The Agencies sometimes encounter mergers through which the merging parties would, by consolidating, gain bargaining leverage over other firms that they transact with. This can encourage those other firms to consolidate to obtain countervailing leverage, encouraging a cascade of further consolidation. This can ultimately lead to an industry where a few powerful firms have leverage against one another and market power over would-be entrants or over trading partners in various parts of the value chain. For example, distributors might merge to gain leverage against suppliers, who then merge to gain leverage against distributors, spurring a wave of mergers that lessen competition by increasing the market power of both. This can exacerbate the problems discussed in Guidelines 1-6, including by increasing barriers to single-level entry, encouraging coordination, and discouraging disruptive innovation.

⁴⁰ *United States v. Pabst Brewing*, 384 U.S. 546, 552-53 (1966).

⁴¹ *Phila. Nat'l Bank*, 374 U.S. at 362 (quoting *Brown Shoe*, 370 U.S. at 317).

Multiple Mergers. The Agencies sometimes see multiple mergers at once or in succession by different players in the same industry. In such cases, the Agencies may examine multiple deals in light of the combined trend toward concentration.

2.8. Guideline 8: When a Merger is Part of a Series of Multiple Acquisitions, the Agencies May Examine the Whole Series.

A firm that engages in an anticompetitive pattern or strategy of multiple acquisitions in the same or related business lines may violate Section 7.⁴² In these situations, the Agencies may evaluate the series of acquisitions as part of an industry trend (see Guideline 7) or evaluate the overall pattern or strategy of serial acquisitions by the acquiring firm collectively under Guidelines 1-6.

In expanding antitrust law beyond the Sherman Act through passage of the Clayton Act, Congress intended “to permit intervention in a cumulative process when the effect of an acquisition may be a significant reduction in the vigor of competition, even though this effect may not be so far-reaching as to amount to a combination in restraint of trade, create a monopoly, or constitute an attempt to monopolize.”⁴³ As the Supreme Court has recognized, a cumulative series of mergers can “convert an industry from one of intense competition among many enterprises to one in which three or four large [companies] produce the entire supply.”⁴⁴ Accordingly, the Agencies will consider individual acquisitions in light of the cumulative effect of related patterns or business strategies.

The Agencies may examine a pattern or strategy of growth through acquisition by examining both the firm’s history and current or future strategic incentives. Historical evidence focuses on the strategic approach taken by the firm to acquisitions (consummated or not), both in the markets at issue and in other markets, to reveal any overall strategic approach to serial acquisitions. Evidence of the firm’s current incentives includes documents and testimony reflecting its plans and strategic incentives both for the individual acquisition and for its position in the industry more broadly. Where one or both of the merging parties has engaged in a pattern or strategy of pursuing consolidation through acquisition, the Agencies will examine the impact of the cumulative strategy under any of the other Guidelines to determine if that strategy may substantially lessen competition or tend to create a monopoly.

2.9. Guideline 9: When a Merger Involves a Multi-Sided Platform, the Agencies Examine Competition Between Platforms, on a Platform, or to Displace a Platform.

Platforms provide different products or services to two or more different groups or “sides” who may benefit from each other’s participation. Mergers involving platforms can threaten competition, even when a platform merges with a firm that is neither a direct competitor nor in a traditional vertical relationship with the platform. When evaluating a merger involving a platform, the Agencies apply Guidelines 1-6 while accounting for market realities associated with platform competition. Specifically,

⁴² Such strategies may also violate Section 2 of the Sherman Act and Section 5 of the FTC Act. Fed. Trade Comm’n, *Policy Statement Regarding the Scope of Unfair Methods of Competition Under Section 5 of the Federal Trade Commission Act*, at 12-14 & nn.73 & 82 (Nov. 10, 2022) (noting that “a series of . . . acquisitions . . . that tend to bring about the harms that the antitrust laws were designed to prevent” has been subject to liability under Section 5).

⁴³ H.R. Rep. No. 81-1191, at 8 (1949).

⁴⁴ See *Brown Shoe*, 370 U.S. at 334 (citing S. Rep. No. 81-1775, at 5 (1950); H.R. Rep. No. 81-1191, at 8 (1949)).

the Agencies consider competition *between* platforms, competition *on* a platform, and competition to *displace* the platform.

Multi-sided platforms generally have several attributes in common, though they can also vary in important ways. Some of these attributes include:

- Platforms have multiple sides. On each side of a platform, platform participants provide or use distinct products and services.⁴⁵ Participants can provide or use different types of products or services on each side.
- A platform operator provides the core services that enable the platform to connect participant groups across multiple sides. The platform operator controls other participants' access to the platform and can influence how interactions among platform participants play out.
- Each side of a platform includes platform participants. Their participation might be as simple as using the platform to find other participants, or as involved as building platform services that enable other participants to connect in new ways and allow new participants to join the platform.
- Network effects occur when platform participants contribute to the value of the platform for other participants and the operator. The value for groups of participants on one side may depend on the number of participants either on the same side (direct network effects) or on the other side(s) (indirect network effects).⁴⁶ Network effects can create a tendency toward concentration in platform industries. Indirect network effects can be asymmetric and heterogeneous; for example, one side of the market or segment of participants may place relatively greater value on the other side(s).
- A conflict of interest can arise when a platform operator is also a platform participant. The Agencies refer to a "conflict of interest" as the divergence that can arise between the operator's incentives to operate the platform as a forum for competition and its incentive to operate as a competitor on the platform itself. As discussed below, a conflict of interest sometimes exacerbates competitive concerns from mergers.

Consistent with the Clayton Act's protection of competition "in any line of commerce," the Agencies will seek to prohibit a merger that harms competition within a relevant market for any product or service offered on a platform to any group of participants—i.e., around one side of the platform (see Section 4.3).⁴⁷

⁴⁵ For example, on 1990s operating-system platforms for personal computer (PC) software, software developers were on one side, PC manufacturers on another, and software purchasers on another.

⁴⁶ For example, 1990s PC manufacturers, software developers, and consumers all contributed to the value of the operating system platform for one another.

⁴⁷ In the limited scenario of a "special type of two-sided platform known as a 'transaction' platform," under Section 1 of the Sherman Act, a relevant market encompassing both sides of a two-sided platform may be warranted. *Ohio v. American Express Co.*, 138 S. Ct. 2274, 2280 (2018). This approach to Section 1 of the Sherman Act is limited to platforms with the "key feature . . . that they cannot make a sale to one side of the platform without simultaneously making a sale to the other." *Id.* Because "they cannot sell transaction services to [either user group] individually . . . transaction platforms are better understood as supplying only one product—transactions." *Id.* at 2286. This characteristic is not present for many types of two-sided or multi-sided platforms; in addition, many platforms offer simultaneous transactions as well as other products and services, and further they may bundle these products with access to transact on the platform or offer quantity discounts.

The Agencies protect competition *between* platforms by preventing the acquisition or exclusion of other platform operators that may substantially lessen competition or tend to create a monopoly. This scenario can arise from various types of mergers:

- A. Mergers involving two platform operators eliminate the competition between them. In a market with a platform, entry or growth by smaller competing platforms can be particularly challenging because of network effects. A common strategy for smaller platforms is to specialize, providing distinctive features. Thus, dominant platforms can lessen competition and entrench their position by systematically acquiring firms competing with one or more sides of a multi-sided platform while they are in their infancy. The Agencies seek to stop these trends in their incipency.
- B. A platform operator may acquire a platform participant, which can entrench the operator's position by depriving rivals of participants and, in turn, depriving them of network effects. For example, acquiring a major seller on a platform may make it harder for rival platforms to recruit buyers. The long-run benefits to a platform operator of denying network effects to rival platforms create a powerful incentive to withhold or degrade those rivals' access to platform participants that the operator acquires. The more powerful the platform operator, the greater the threat to competition presented by mergers that may weaken rival operators or increase barriers to entry and expansion.
- C. Acquisitions of firms that provide services that facilitate participation on multiple platforms can deprive rivals of platform participants. Many services can facilitate such participation, such as tools that help shoppers compare prices across platforms, applications that help sellers manage listings on multiple platforms, or software that helps users switch among platforms.
- D. Mergers that involve firms that provide other important inputs to platform services can enable the platform operator to deny rivals the benefits of those inputs. For example, acquiring data that helps facilitate matching, sorting, or prediction services may enable the platform to weaken rival platforms by denying them that data.

The Agencies protect competition *on* a platform in any markets that interact with the platform. When a merger involves a platform operator and platform participants, the Agencies carefully examine whether the merger would create conflicts of interest that would harm competition. A platform operator that is also a platform participant may have a conflict of interest whereby it has an incentive to give its own products and services an advantage over other participants competing on the platform. Platform operators must often choose between making it easy for users to access their preferred products and directing those users to products that instead provide greater benefit to the platform operator. Merging with a firm that makes a product offered on the platform may change how the platform operator balances these competing interests. For example, the platform operator may find it is more profitable to give its own product greater prominence even if that product is inferior or is offered on worse terms after the merger—and even if some participants leave the platform as a result.⁴⁸ This can harm competition in

⁴⁸ However, few participants will leave if, for example, the switching costs are relatively high or if the advantaged product is a small component of the overall set of services those participants access on the platform. Moreover, in the long run few participants will leave if scale economies, network effects, or entry barriers enable the advantaged product to eventually gain market power of its own, with rivals of the advantaged product exiting or becoming less attractive. After these dynamics play

the product market for the advantaged product, where the harm to competition may be experienced both on the platform and in other channels.

The Agencies protect competition to *displace* the platform or any of its services. For example, new technologies or services may create an important opportunity for firms to replace one or more services the incumbent platform operator provides, shifting some participants to partially or fully meet their needs in different ways or through different channels. Similarly, a non-platform service can lessen dependence on the platform by providing an alternative to one or more functions provided by the platform operators. When platform owners are dominant, the Agencies seek to prevent even relatively small accretions of power from inhibiting the prospects for displacing the platform or for decreasing dependency on the platform.

In addition, a platform operator that advantages its own products that compete *on* the platform can lessen competition *between* platforms and to *displace* the platform, as the operator may both advantage its own product or service, and also deprive rival platforms of access to it, limiting those rivals' network effects.

2.10. Guideline 10: When a Merger Involves Competing Buyers, the Agencies Examine Whether It May Substantially Lessen Competition for Workers, Creators, Suppliers, or Other Providers.

A merger between competing buyers may harm sellers just as a merger between competing sellers may harm buyers.⁴⁹ The same—or analogous—tools used to assess the effects of a merger of sellers can be used to analyze the effects of a merger of buyers, including employers as buyers of labor. Firms can compete to attract contributions from a wide variety of workers, creators, suppliers, and service providers. The Agencies protect this competition in all its forms.

A merger of competing buyers can substantially lessen competition by eliminating the competition between the merging buyers or by increasing coordination among the remaining buyers. It can likewise lead to undue concentration among buyers or entrench or extend the position of a dominant buyer. Competition among buyers can have a variety of beneficial effects analogous to competition among sellers. For example, buyers may compete by raising the payments offered to suppliers, by expanding supply networks, through transparent and predictable contracting, procurement, and payment practices, or by investing in technology that reduces frictions for suppliers. In contrast, a reduction in competition among buyers can lead to artificially suppressed input prices or purchase volume, which in turn reduces incentives for suppliers to invest in capacity or innovation. Labor markets are important buyer markets. The same general concerns as in other markets apply to labor markets where employers are the buyers of labor and workers are the sellers. The Agencies will consider whether workers face a risk that the merger may substantially lessen competition for their labor.⁵⁰ Where a merger between

out, the platform operator could advantage its own products without losing as many participants, as there would be fewer alternative products available through other channels.

⁴⁹ See, e.g., *Mandeville Island Farms, Inc. v. Am. Crystal Sugar Co.*, 334 U.S. 219, 235-36 (1948) (“The [Sherman Act] does not confine its protection to consumers, or to purchasers, or to competitors, or to sellers. . . . The Act is comprehensive in its terms and coverage, protecting all who are made victims of the forbidden practices by whomever they may be perpetrated.”).

⁵⁰ See, e.g., *Alston*, 141 S. Ct. 2141 (applying the Sherman Act to protect workers from an employer-side agreement to limit compensation).

employers may substantially lessen competition for workers, that reduction in labor market competition may lower wages or slow wage growth, worsen benefits or working conditions, or result in other degradations of workplace quality.⁵¹ When assessing the degree to which the merging firms compete for labor, evidence that a merger may have any one or more of these effects can demonstrate that substantial competition exists between the merging firms.

Labor markets frequently have characteristics that can exacerbate the competitive effects of a merger between competing employers. For example, labor markets often exhibit high switching costs and search frictions due to the process of finding, applying, interviewing for, and acclimating to a new job. Switching costs can also arise from investments specific to a type of job or a particular geographic location. Moreover, the individual needs of workers may limit the geographical and work scope of the jobs that are competitive substitutes.

In addition, finding a job requires the worker and the employer to agree to the match. Even within a given salary and skill range, employers often have specific demands for the experience, skills, availability, and other attributes they desire in their employees. At the same time, workers may seek not only a paycheck but also work that they value in a workplace that matches their own preferences, as different workers may value the same aspects of a job differently. This matching process often narrows the range of rivals competing for any given employee. The level of concentration at which competition concerns arise may be lower in labor markets than in product markets, given the unique features of certain labor markets. In light of their characteristics, labor markets can be relatively narrow.

The features of labor markets may in some cases put firms in dominant positions. To assess this dominance in labor markets (see Guideline 6), the Agencies often examine the merging firms' power to cut or freeze wages, slow wage growth, exercise increased leverage in negotiations with workers, or generally degrade benefits and working conditions without prompting workers to quit.

If the merger may substantially lessen competition or tend to create a monopoly in upstream markets, that loss of competition is not offset by purported benefits in a separate downstream product market. Because the Clayton Act prohibits mergers that may substantially lessen competition or tend to create a monopoly in *any* line of commerce and in *any* section of the country, a merger's harm to competition among buyers is not saved by benefits to competition among sellers. That is, a merger can substantially lessen competition in one or more buyer markets, seller markets, or both, and the Clayton Act protects competition in any one of them.⁵² If the parties claim any benefits to competition in a relevant buyer market, the Agencies will assess those claims using the frameworks in Section 3.

Just as they do when analyzing competition in the markets for products and services, the Agencies will analyze labor market competition on a case-by-case basis.

⁵¹ A decrease in wages is understood as relative to what would have occurred in the absence of the transaction; in many cases, a transaction will not reduce wage levels, but rather slow wage growth. Wages encompass all aspects of pecuniary compensation, including benefits. Job quality encompasses non-pecuniary aspects that workers value, such as working conditions and terms of employment.

⁵² Often, mergers that harm competition among buyers also harm competition among sellers as a result. For example, when a monopsonist lowers purchase prices by decreasing input purchases, they will generally decrease sales in downstream markets as well. (See Section 4.2.D)

2.11. Guideline 11: When an Acquisition Involves Partial Ownership or Minority Interests, the Agencies Examine Its Impact on Competition.

In many acquisitions, two companies come under common control. In some situations, however, the acquisition of less-than-full control may still influence decision-making at the target firm or another firm in ways that may substantially lessen competition. Acquisitions of partial ownership or other minority interests may give the investor rights in the target firm, such as rights to appoint board members, observe board meetings, influence the firm's ability to raise capital, impact operational decisions, or access competitively sensitive information. The Agencies have concerns with both cross-ownership, which refers to holding a non-controlling interest in a competitor, as well as common ownership, which occurs when individual investors hold non-controlling interests in firms that have a competitive relationship that could be affected by those joint holdings.

Partial acquisitions that do not result in control may nevertheless present significant competitive concerns. The acquisition of a minority position may permit influence of the target firm, implicate strategic decisions of the acquirer with respect to its investment in other firms, or change incentives so as to otherwise dampen competition. The post-acquisition relationship between the parties and the independent incentives of the parties outside the acquisition may be important in determining whether the partial acquisition may substantially lessen competition. Such partial acquisitions are subject to the same legal standard as any other acquisition.⁵³

The Agencies recognize that cross-ownership and common ownership can reduce competition by softening firms' incentives to compete, even absent any specific anticompetitive act or intent. While the Agencies will consider any way in which a partial acquisition may affect competition, they generally focus on three principal effects:

First, a partial acquisition can lessen competition by giving the partial owner the ability to influence the competitive conduct of the target firm.⁵⁴ For example, a voting interest in the target firm or specific governance rights, such as the right to appoint members to the board of directors, influence capital budgets, determine investment return thresholds, or select particular managers, can create such influence. Additionally, a nonvoting interest may, in some instances, provide opportunities to prevent, delay, or discourage important competitive initiatives, or otherwise impact competitive decision making. Such influence can lessen competition because the partial owner could use its influence to induce the target firm to compete less aggressively or to coordinate its conduct with that of the acquiring firm.

Second, a partial acquisition can lessen competition by reducing the incentive of the acquiring firm to compete.⁵⁵ Acquiring a minority position in a rival might blunt the incentive of the partial owner to compete aggressively because it may profit through dividend or other revenue share even when it loses business to the rival. For example, the partial owner may decide not to develop a new product feature to win market share from the firm in which it has acquired an interest, because doing so will

⁵³ See *United States v. E. I. du Pont de Nemours & Co.*, 353 U.S. 586, 592 (1957) (“[A]ny acquisition by one corporation of all or any part of the stock of another corporation, competitor or not, is within the reach of [Section 7 of the Clayton Act] whenever the reasonable likelihood appears that the acquisition will result in a restraint of commerce or in the creation of a monopoly of any line of commerce.”).

⁵⁴ See *United States v. Dairy Farmers of Am., Inc.*, 426 F.3d 850, 860-61 (6th Cir. 2005).

⁵⁵ See *Denver & Rio Grande v. United States*, 387 U.S. 485, 504 (1967) (identifying Section 7 concerns with a 20% investment).

reduce the value of its investment in its rival. This reduction in the incentive of the acquiring firm to compete arises even when it cannot directly influence the conduct or decision making of the target firm.

Third, a partial acquisition can lessen competition by giving the acquiring firm access to non-public, competitively sensitive information from the target firm. Even absent any ability to influence the conduct of the target firm, access to competitively sensitive information can substantially lessen competition through other mechanisms. For example, it can enhance the ability of the target and the partial owner to coordinate their behavior and make other accommodating responses faster and more targeted. The risk of coordinated effects is greater if the transaction also facilitates the flow of competitively sensitive information from the investor to the target firm. Even if coordination does not occur, the partial owner may use that information to preempt or appropriate a rival's competitive business strategies for its own benefit. If rivals know their efforts to win trading partners can be immediately appropriated, they may see less value in taking competitive actions in the first place, resulting in a lessening of competition.

* * *

The analyses above address common scenarios that the Agencies use to assess the risk that a merger may substantially lessen competition or tend to create a monopoly. However, they are not exhaustive. The Agencies have in the past encountered mergers that lessen competition through mechanisms not covered above. For example:

- A. A merger that would enable firms to avoid a regulatory constraint because that constraint was applicable to only one of the merging firms;
- B. A merger that would enable firms to exploit a unique procurement process that favors the bids of a particular competitor who would be acquired in the merger; or
- C. In a concentrated market, a merger that would dampen the acquired firm's incentive or ability to compete due to the structure of the acquisition or the acquirer.

As these scenarios and these Guidelines indicate, a wide range of evidence can show that a merger may lessen competition or tend to create a monopoly. Whatever the sources of evidence, the Agencies look to the facts and the law in each case.

Whatever frameworks the Agencies use to identify that a merger may substantially lessen competition or tend to create a monopoly, they also examine rebuttal evidence under the framework in Section 3.

3. Rebuttal Evidence Showing that No Substantial Lessening of Competition is Threatened by the Merger

The Agencies may assess whether a merger may substantially lessen competition or tend to create a monopoly based on a fact-specific analysis under any one or more of the Guidelines discussed above.⁵⁶ The Supreme Court has determined that analysis should consider “other pertinent factors” that may “mandate[] a conclusion that no substantial lessening of competition [is] threatened by the acquisition.”⁵⁷ The factors pertinent to rebuttal depend on the nature of the threat to competition or tendency to create a monopoly resulting from the merger.

Several common types of rebuttal and defense evidence are subject to legal tests established by the courts. The Agencies apply those tests consistent with prevailing law, as described below.

3.1. Failing Firms

When merging parties suggest the weak or weakening financial position of one of the merging parties will prevent a lessening of competition, the Agencies examine that evidence under the “failing firm” defense established by the Supreme Court. This defense applies when the assets to be acquired would imminently cease playing a competitive role in the market even absent the merger.

As set forth by the Supreme Court, the failing firm defense has three requirements:

- A. “[T]he evidence show[s] that the [failing firm] face[s] the grave probability of a business failure.”⁵⁸ The Agencies typically look for evidence in support of this element that the allegedly failing firm would be unable to meet its financial obligations in the near future. Declining sales and/or net losses, standing alone, are insufficient to show this requirement.
- B. “The prospects of reorganization of [the failing firm are] dim or nonexistent.”⁵⁹ The Agencies typically look for evidence suggesting that the failing firm would be unable to reorganize successfully under Chapter 11 of the Bankruptcy Act, taking into account that “companies reorganized through receivership, or through [the Bankruptcy Act] often emerge[] as strong competitive companies.”⁶⁰ Evidence of the firm’s actual attempts to resolve its debt with creditors is important.
- C. “[T]he company that acquires the failing [firm] or brings it under dominion is the only available purchaser.”⁶¹ The Agencies typically look for evidence that a company has made unsuccessful good-faith efforts to elicit reasonable alternative offers that pose a less severe danger to competition than does the proposed merger.⁶²

⁵⁶ See *United States v. AT&T, Inc.*, 916 F.3d at 1032.

⁵⁷ See *United States v. Gen. Dynamics Corp.*, 415 U.S. 486, 498 (1974); *Baker Hughes*, 908 F.2d at 990 (quoting *General Dynamics* and describing its holding as permitting rebuttal based on a “finding that ‘no substantial lessening of competition occurred or was threatened by the acquisition’”).

⁵⁸ *Citizen Publ’g Co. v. United States*, 394 U.S. 131, 138 (1969).

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.* at 136-39 (quoting *Int’l Shoe Co. v. FTC*, 280 U.S. 291, 302 (1930)).

⁶² Any offer to purchase the assets of the failing firm for a price above the liquidation value of those assets will be regarded as a reasonable alternative offer. Parties must solicit reasonable alternative offers before claiming that the business is failing.

Although merging parties sometimes argue that a poor or weakening position should serve as a defense even when it does not meet these elements, the Supreme Court has “confine[d] the failing company doctrine to its present narrow scope.”⁶³ The Agencies evaluate evidence of a failing firm consistent with this prevailing law.⁶⁴

3.2. Entry and Repositioning

Merging parties sometimes raise a rebuttal argument that a reduction in competition resulting from the merger would induce entry or repositioning⁶⁵ into the relevant market, preventing the merger from substantially lessening competition or tending to create a monopoly in the first place. This argument posits that a merger may, by substantially lessening competition, make the market more profitable for the merged firm and any remaining competitors, and that this increased profitability may induce new entry. To evaluate this rebuttal evidence, the Agencies assess whether entry induced by the merger would be “timely, likely, and sufficient in its magnitude, character, and scope to deter or counteract the competitive effects of concern.”⁶⁶

Timeliness. To show that no substantial lessening of competition is threatened by a merger, entry must be rapid enough to replace lost competition before any effect from the loss of competition due to the merger may occur. Entry in most industries takes a significant amount of time and is therefore insufficient to counteract any substantial lessening of competition that is threatened by a merger. Moreover, the entry must be durable: an entrant that does not plan to sustain its investment or that may exit the market would not ensure long-term preservation of competition.

Likelihood. Entry induced by lost competition must be so likely that no substantial lessening of competition is threatened by the merger. Firms make entry decisions based on the market conditions they expect once they participate in the market. If the new entry is sufficient to counteract the merger’s effect on competition, the Agencies analyze why the merger would induce entry that was not planned in pre-merger competitive conditions.

The Agencies also assess whether the merger may increase entry barriers. For example, the merging firms may have a greater ability to discourage or block new entry when combined than they would have as separate firms. Mergers may enable or incentivize unilateral or coordinated exclusionary

Liquidation value is the highest value the assets could command outside the market. If a reasonable alternative offer was rejected, the parties cannot claim that the business is failing.

⁶³ *Citizen Publ’g*, 394 U.S. at 139.

⁶⁴ The Agencies do not normally credit claims that the assets of a division would exit the relevant market in the near future unless: (1) applying cost allocation rules that reflect true economic costs, the division has a persistently negative cash flow on an operating basis, and such negative cash flow is not economically justified for the firm by benefits such as added sales in complementary markets or enhanced customer goodwill; and (2) the owner of the failing division has made unsuccessful good-faith efforts to elicit reasonable alternative offers that would keep its assets in the relevant market and pose a less severe danger to competition than does the proposed acquisition. Because firms can allocate costs, revenues, and intra-company transactions among their subsidiaries and divisions, the Agencies require evidence that is not solely based on management plans that could have been prepared for the purpose of demonstrating negative cash flow or the prospect of exit from the relevant market.

⁶⁵ Repositioning is a supply-side response that is evaluated like entry. If repositioning requires movement of assets from other markets, the Agencies will consider the costs and competitive effects of doing so. Repositioning that would reduce competition in the markets from which products or services are moved is not a cognizable rebuttal for a lessening of competition in the relevant market.

⁶⁶ *FTC v. Sanford Health*, 926 F.3d 959, 965 (8th Cir. 2019).

strategies that make entry more difficult. Entry can be particularly challenging when a firm must enter at multiple levels of the market at sufficient scale to compete effectively.

Sufficiency. Even where timely and likely, the prospect of entry may not effectively prevent a merger from threatening a substantial lessening of competition. Entry may be insufficient due to a wide variety of constraints that limit an entrant's effectiveness as a competitor. Entry must at least replicate the scale, strength, and durability of one of the merging parties to be considered sufficient. The Agencies typically do not credit entry that depends on lessening competition in other markets.

As part of their analysis, the Agencies will consider the economic realities at play. For example, lack of successful entry in the past will likely suggest that entry may be slow or difficult. Recent examples of entry, whether successful or unsuccessful, provide the starting point for identifying the elements of practical entry barriers and the features of the industry that facilitate or interfere with entry. The Agencies will also consider whether the parties' entry arguments are consistent with the rationale for the merger or imply that the merger itself would be unprofitable.

3.3. Procompetitive Efficiencies

The Supreme Court has held that "possible economies [from a merger] cannot be used as a defense to illegality."⁶⁷ Competition usually spurs firms to achieve efficiencies internally, and firms also often work together using contracts short of a merger to combine complementary assets without the full anticompetitive consequences of a merger.

Merging parties sometimes raise a rebuttal argument that, notwithstanding other evidence that competition may be lessened, evidence of procompetitive efficiencies shows that no substantial lessening of competition is in fact threatened by the merger. This argument asserts that the merger would not substantially lessen competition in any relevant market in the first place.⁶⁸ When assessing this argument, the Agencies will not credit vague or speculative claims, nor will they credit benefits outside the relevant market that would not prevent a lessening of competition in the relevant market. Rather, the Agencies examine whether the evidence⁶⁹ presented by the merging parties shows each of the following:

Merger Specificity. The merger will produce substantial competitive benefits that could not be achieved without the merger under review.⁷⁰ Alternative ways of achieving the claimed benefits are considered in making this determination. Alternative arrangements could include organic growth of one of the merging firms, contracts between them, mergers with others, or a partial merger involving only those assets that give rise to the procompetitive efficiencies.

⁶⁷ *Phila. Nat'l Bank*, 374 U.S. at 371; *Procter & Gamble Co.*, 386 U.S. at 580 ("Congress was aware that some mergers which lessen competition may also result in economies but it struck the balance in favor of protecting competition.").

⁶⁸ *United States v. Anthem*, 855 F.3d 345, 353-55 (D.C. Cir. 2017) (although efficiencies not a "defense" to antitrust liability, evidence sometimes used "to rebut a prima facie case"); *Saint Alphonsus Medical Center-Nampa*, 778 F.3d at 791 ("The Clayton Act focuses on competition, and the claimed efficiencies therefore must show that the prediction of anticompetitive effects from the prima facie case is inaccurate.").

⁶⁹ In general, evidence related to efficiencies developed prior to the merger challenge is much more probative than evidence developed during the Agencies' investigation or litigation.

⁷⁰ If inter-firm collaborations are achievable by contract, they are not merger specific. The Agencies will credit the merger specificity of efficiencies only in the presence of evidence that a contract to achieve the asserted efficiencies would not be practical. See *Anthem*, 855 F.3d at 357.

Verifiability. These benefits are verifiable, and have been verified, using reliable methodology and evidence not dependent on the subjective predictions of the merging parties or their agents. Procompetitive efficiencies are often speculative and difficult to verify and quantify, and efficiencies projected by the merging firms often are not realized. If reliable methodology for verifying efficiencies does not exist or is otherwise not presented by the merging parties, the Agencies are unable to credit those efficiencies.

Prevents a Reduction in Competition. To the extent efficiencies merely benefit the merging firms, they are not cognizable. The merging parties must demonstrate through credible evidence that, within a short period of time, the benefits will prevent the risk of a substantial lessening of competition in the relevant market.

Not Anticompetitive. Any benefits claimed by the merging parties are cognizable only if they do not result from the anticompetitive worsening of terms for the merged firm's trading partners.⁷¹

Procompetitive efficiencies that satisfy each of these criteria are called cognizable efficiencies. To successfully rebut evidence that a merger may substantially lessen competition, cognizable efficiencies must be of a nature, magnitude, and likelihood that no substantial lessening of competition is threatened by the merger in any relevant market. Cognizable efficiencies that would not prevent the creation of a monopoly cannot justify a merger that may tend to create a monopoly.

⁷¹ The Agencies will not credit efficiencies if they reflect or require a decrease in competition in a separate market. For example, if input costs are expected to decrease, the cost savings will not be treated as an efficiency if they reflect an increase in monopsony power.

4. Analytical, Economic, and Evidentiary Tools

The analytical, economic, and evidentiary tools that follow can be applicable to many parts of the Agencies' evaluation of a merger as they apply the factors and frameworks discussed in Sections 2 and 3.

4.1. Sources of Evidence

This subsection describes the most common sources of evidence the Agencies draw on in a merger investigation. The evidence the Agencies rely upon to evaluate whether a merger *may* substantially lessen competition or tend to create a monopoly is weighed based on its probative value. In assessing the available evidence, the Agencies consider documents, testimony, available data, and analysis of those data, including credible econometric analysis and economic modeling.

Merging Parties. The Agencies often obtain substantial information from the merging parties, including documents, testimony, and data. Across all of these categories, evidence created in the normal course of business is more probative than evidence created after the company began anticipating a merger review. Similarly, the Agencies give less weight to predictions by the parties or their employees, whether in the ordinary course of business or in anticipation of litigation, offered to allay competition concerns. Where the testimony of outcome-interested merging party employees contradicts ordinary course business records, the Agencies typically give greater weight to the business records.

Evidence that the merging parties intend or expect the merger to lessen competition, such as plans to coordinate with other firms, raise prices, reduce output or capacity, reduce product quality or variety, lower wages, cut benefits, exit a market, cancel plans to enter a market without a merger, withdraw products or delay their introduction, or curtail research and development efforts after the merger, can be highly informative in evaluating the effects of a merger on competition. The Agencies give little weight, however, to the lack of such evidence or the expressed contrary intent of the merging parties.

Customers, Workers, Industry Participants, and Observers. Customers can provide a variety of information to the Agencies, ranging from information about their own purchasing behavior and choices to their views about the effects of the merger itself. The Agencies consider the relationship between customers and the merging parties in weighing customer evidence. The ongoing business relationship between a customer and a merging party may discourage the customer from providing evidence inconsistent with the interests of the merging parties.

Workers and representatives from labor organizations can provide information regarding, among other things, wages, non-wage compensation, working conditions, the individualized needs of workers in the market in question, the frictions involved in changing jobs, and the industry in which they work.

Similarly, other suppliers, indirect customers, distributors, consultants, and industry analysts can also provide information helpful to a merger inquiry. As with other interested parties, the Agencies give less weight to evidence created in anticipation of a merger investigation and more weight to evidence developed in the ordinary course of business.

Market Effects in Consummated Mergers. Evidence of observed post-merger price increases or worsened terms is given substantial weight. A consummated merger, however, may substantially lessen competition even if such effects have not yet been observed, perhaps because the merged firm may be aware of the possibility of post-merger antitrust review and is therefore moderating its conduct.

Consequently, in evaluating consummated mergers, the Agencies also consider the same types of evidence when evaluating proposed mergers.

Econometric Analysis and Economic Modeling. Econometric analysis of data and other types of economic modeling can be informative in evaluating the potential effects of a merger on competition. The Agencies give more weight to analysis using high quality data and adhering to rigorous standards. But the Agencies also take into account that in some cases, the availability or quality of data or reliable modeling techniques might limit the availability and relevance of econometric modeling. When data is available, the Agencies recognize that the goal of economic modeling is not to create a perfect representation of reality, but rather to inform an assessment of the likely change in firm incentives resulting from a merger.

Transaction Terms. The financial terms of the transaction may also be informative regarding a merger's impact on competition. For example, a purchase price that exceeds the acquired firm's stand-alone market value can sometimes indicate that the acquiring firm is paying a premium because it expects to be able to benefit from reduced competition.

4.2. Evaluating Competition Among Firms

This subsection discusses evidence and tools the Agencies look to when assessing competition among firms. The evidence and tools in this section can be relevant to a variety of settings, for example: to assess competition between rival firms (Guideline 2); the ability and incentive to limit access to a product rivals use to compete (Guideline 5); or for market definition (Section 4.3), for example when carrying out the Hypothetical Monopolist Test (Section 4.3.A).

For clarity, the discussion in this subsection often focuses on competition between two suppliers of substitute products that set prices. Analogous analytic tools may also be relevant in more general settings, for example when considering: competition among more than two suppliers; competition among buyers or employers to procure inputs and labor; competition that derives from customer willingness to buy in different locations; and competition that takes place in dimensions other than price or when terms are determined through, for example, negotiations or auctions.

Guideline 2 describes how different types of evidence can be used in assessing the potential harm to competition from a merger; some portions of Guideline 2 that are relevant in other settings are repeated below.

4.2.A. Generally Applicable Considerations

The Agencies may consider one or more of the following types of evidence, tools, and metrics when assessing the degree of competition among firms:

Strategic Deliberations or Decisions. The Agencies may analyze the extent of competition among firms, for example between the merging firms, by examining evidence of their strategic deliberations or decisions in the regular course of business. For example, in some markets, the firms may monitor each other's pricing, marketing campaigns, facility locations, improvements, products, capacity, output, input costs, and/or innovation plans. This can provide evidence of competition between the merging firms, especially when they react by taking steps to preserve or enhance the competitiveness or profitability of their own products or services.

Prior Merger, Entry, and Exit Events. The Agencies may look to historical events to assess the presence and substantiality of direct competition between the merging firms. For example, the Agencies may examine the impact of recent relevant mergers, entry, expansion, or exit events on the merging parties or their competitive behavior.

Customer Substitution. Customers' willingness to switch between different firms' products is an important part of the competitive process. Firms are closer competitors the more that customers are willing to switch between their products, for example because they are more similar in quality, price, or other characteristics.

Evidence commonly analyzed to show the extent of substitution among firms' products includes: how customers have shifted purchases in the past in response to relative changes in price or other terms and conditions; documentary and testimonial evidence such as win/loss reports, evidence from discount approval processes, switching data, customer surveys, as well as information from suppliers of complementary products and distributors; objective information about product characteristics; and market realities affecting the ability of customers to switch.

Impact of Competitive Actions on Rivals. When one firm takes competitive actions to attract customers, this can benefit the firm at the expense of its rivals. The Agencies may gauge the extent of competition among firms by considering the impact that competitive actions by one firm have on the others. The impact of a firm's competitive actions on a rival generally depends on how many sales a rival would lose as a result of the competitive actions, as well as the profitability of those lost sales. The Agencies may use margins to measure the profitability of the sale a rival would have made.⁷²

Impact of Eliminating Competition Between the Firms. In some instances, evidence may be available to assess the impact of competition from one or more firms on the other firms' actions, such as firm choices about price, quality, wages, or another dimension of competition. This can be gauged by comparing the two firms' actions when they compete and make strategic choices independently against the actions the firms might choose if they acted jointly. Actual or predicted changes in these results of competition, when available, can indicate the degree of competition between the firms.

To make this type of comparison, the Agencies sometimes rely on economic models. Often, such models consider the firms' incentives to change their actions in one or more selected dimensions, such as price, in a somewhat simplified scenario. For example, a model might focus on the firms' short-run incentives to change price, while abstracting from a variety of additional competitive forces and dimensions of competition, such as the potential for firms to reposition their products or for the merging firms to coordinate with other firms. Such a model may incorporate data and evidence in order to produce quantitative estimates of the impact of the merger on firm incentives and corresponding choices. This type of exercise is sometimes referred to by economists as "merger simulation" despite the fact that the hypothetical setting considers only selected aspects of the loss of competition from a merger. The Agencies use such models to give an indication of the scale and importance of competition, not to precisely predict outcomes.

⁷² The margin on incremental units is the difference between incremental revenue (often equal to price) and incremental cost on those units. The Agencies may use accounting data to measure incremental costs, but they do not necessarily rely on accounting margins recorded by firms in the ordinary course of business because such margins often do not align with the concept of incremental cost that is relevant in economic analysis of a merger.

4.2.B. Considerations When Terms Are Set by Firms

The Agencies may use various types of evidence and metrics to assess the strength of competition among firms that set terms to their customers. Firms might offer the same terms to different customers or different terms to different groups of customers.

Competition in this setting can lead firms to set lower prices or offer more attractive terms when they act independently than they would in a setting where that competition was eliminated by a merger. When considering the impact of competition on the incentives to set price, to the extent price increases on one firm's products would lead customers to switch to products from another firm, their merger will enable the merged firm to profit by unilaterally raising the price of one or both products above the pre-merger level. Some of the sales lost because of the price increase will be diverted to the products of the other firm, and capturing the value of these diverted sales can make the price increase profitable even though it would not have been profitable prior to the merger.

A measure of customer substitution between firms in this setting is the diversion ratio. The diversion ratio from one product to another is a metric of how customers likely would substitute between them. The diversion ratio is the fraction of unit sales lost by the first product due to a change in terms, such as an increase in its price, that would be diverted to the second product. The higher the diversion ratio between two products made by different firms, the stronger the competition between them.

A high diversion ratio between the products owned by two firms can indicate strong competition between them even if the diversion ratio to another firm is higher. The diversion ratio from one of the products of one firm to a group of products made by other firms, defined analogously, is sometimes referred to as the aggregate diversion ratio or the recapture rate.

A measure of the impact on rivals of competitive actions is the value of diverted sales from a price increase. The value of sales diverted from one firm to a second firm, when the first firm raises its price on one of its products, is equal to the number of units that would be diverted from the first firm to the second, multiplied by the difference between the second firm's price and the incremental cost of the diverted sales. To interpret the magnitude of the value of diverted sales, the Agencies may use as a basis of comparison either the incremental cost to the second firm of making the diverted sales, or the revenues lost by the first firm as a result of the price increase. The ratio of the value of diverted sales to the revenues lost by the first firm can be an indicator of the upward pricing pressure that would result from the loss of competition between the two firms. Analogous concepts can be applied to analyze the impact on rivals of worsening terms other than price.

4.2.C. Considerations When Terms Are Set Through Bargaining or Auctions

In some industries, buyers and sellers negotiate prices and other terms of trade. In bargaining, buyers commonly negotiate with more than one seller and may play competing sellers off against one another. In other industries, sellers might sell their products, or buyers might procure inputs, using an auction. Negotiations may involve aspects of an auction as well as aspects of one-on-one negotiation. Competition among sellers can significantly enhance the ability of a buyer to obtain a result more favorable to it, and less favorable to the sellers, compared to a situation where the elimination of competition through a merger prevents buyers from playing those sellers off against each other in negotiations.

Sellers may compete even when a customer does not directly play their offers against each other. The attractiveness of alternative options influences the importance of reaching an agreement to the

negotiating parties and thus the terms of the agreement. A party that has many attractive alternative trading partners places less importance on reaching an agreement with any one particular trading partner than a party with few attractive alternatives. As alternatives for one party are eliminated (such as through a merger), the trading partner gains additional bargaining leverage reflecting that loss of competition. A merger between sellers may lessen competition even if the merged firm handles negotiations for the merging firms' products separately.

Thus, qualitative or quantitative evidence about the leverage provided to buyers by competing suppliers may be used to assess the extent of competition among firms in this setting. Analogous evidence may be used when analyzing a setting where terms are set using auctions, for example, procurement auctions where suppliers bid to serve a buyer. If, for some categories of procurements, certain suppliers are often among the most attractive to the buyer, competition among that group of suppliers is likely to be strong.

Firms sometimes keep records of the progress and outcome of individual sales efforts, and the Agencies may use these data to generate measures of the extent to which customers would likely substitute between the two firms. Examples of such measures might include a diversion ratio based on the rate at which customers would buy from one firm if the other one was not available, or the frequency with which the two firms bid on contracts with the same customer.

4.2.D. Considerations When Firms Determine Capacity and Output

In some markets, the choice of how much to produce (output decisions) or how much productive capacity to maintain (capacity decisions) are key strategic variables. When a firm decreases output, it may lose sales to rivals, but also drive up prices. Because a merged firm will account for the impact of higher prices across all of the merged firms' sales, it may have an incentive to decrease output as a result of the merger. The loss of competition through a merger of two firms may lead the merged firm to leave capacity idle, refrain from building or obtaining capacity that would have been obtained absent the merger, lay off or stop hiring workers, or eliminate pre-existing production capabilities. A firm may also divert the use of capacity away from one relevant market and into another market so as to raise the price in the former market. The analysis of the extent to which firms compete may differ depending on how a merger between them might create incentives to suppress output.

Competition between merging firms is greater when (1) the merging firms' market shares are relatively high; (2) the merging firms' products are relatively undifferentiated from each other; (3) the market elasticity of demand is relatively low; (4) the margin on the suppressed output is relatively low; and (5) the supply responses of non-merging rivals are relatively small. Qualitative or quantitative evidence may be used to evaluate and weigh each of these factors.

In some cases, competition between firms—including one firm with a substantial share of the sales in the market and another with significant excess capacity to serve that market—can prevent an output suppression strategy from being profitable. This can occur even if the firm with the excess capacity has a relatively small share of sales, as long as that firm's ability to expand, and thus keep prices from rising, makes an output suppression strategy unprofitable for the firm with the larger market share.

4.2.E. Considerations for Innovation and Product Variety Competition

Firms can compete for customers by offering varied and innovative products and features, which could range from minor improvements to the introduction of a new product category. Features can include new or different product attributes, services offered along with a product, or higher-quality services standing alone. Customers value the variety of products or services that competition generates, including having a variety of locations at which they can shop.

Offering the best mix of products and features is an important dimension of competition that may be harmed as a result of the elimination of competition between the merging parties.

When a firm introduces a new product or improves a product's features, some of the sales it gains may be at the expense of its rivals, including rivals that are competing to develop similar products and features. As a result, competition between firms may lead them to make greater efforts to offer a variety of products and features than would be the case if the firms were jointly owned, for example, if they merged. The merged firm may have a reduced incentive to continue or initiate development of new products that would have competed with the other merging party, but post-merger would "cannibalize" what would be its own sales.⁷³ A service provider may have a reduced incentive to continue valuable upgrades offered by the acquired firm. The merged firm may have a reduced incentive to engage in disruptive innovation that would threaten the business of one of the merging firms. Or it may have the incentive to change its product mix, such as by ceasing to offer one of the merging firms' products, leaving worse off the customers who previously chose the product that was eliminated. For example, competition may be harmed when customers with a preference for a low-price option lose access to it, even if remaining products have higher quality.

The incentives to compete aggressively on innovation and product variety depend on the capabilities of the firms and on customer reactions to the new offerings. Development of new features depends on having the appropriate expertise and resources. Where firms are two of a small number of companies with specialized employees, development facilities, intellectual property, or research projects in a particular area, competition between them will have a greater impact on their incentives to innovate.

Innovation may be directed at outcomes beyond product features; for example, innovation may be directed at reducing costs or adopting new technology for the distribution of products.

4.3. Market Definition

The Clayton Act protects competition "in any line of commerce in any section of the country."⁷⁴ The Agencies engage in a market definition inquiry in order to identify whether there is any line of commerce or section of the country in which the merger may substantially lessen competition or tend to create a monopoly. The Agencies identify the "area of effective competition" in which competition may be lessened "with reference to a product market (the 'line of commerce') and a geographic market (the 'section of the country.')."⁷⁵ The Agencies refer to the process of identifying market(s) protected by the Clayton Act as a "market definition" exercise and the markets so defined as "relevant antitrust markets,"

⁷³ Sales "cannibalization" refers to a situation where customers of a firm substitute away from one of the firm's products to another product offered by the same firm.

⁷⁴ 15 U.S.C. § 18.

⁷⁵ *Brown Shoe*, 370 U.S. at 324.

or simply “relevant markets.” Market definition can also allow the Agencies to identify market participants and measure market shares and market concentration.

A relevant antitrust market is an area of effective competition, comprising both product (or service) and geographic elements. The outer boundaries of a relevant product market are determined by the “reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it.”⁷⁶ Within a broad relevant market, however, effective competition often occurs in numerous narrower relevant markets.⁷⁷ Market definition ensures that relevant antitrust markets are sufficiently broad, but it does not always lead to a single relevant market. Section 7 of the Clayton Act prohibits any merger that may substantially lessen competition “in any line of commerce” and in “any section of the country,” and the Agencies protect competition by challenging a merger that may lessen competition in any one or more relevant markets.

Market participants often encounter a range of possible substitutes for the products of the merging firms. However, a relevant market cannot meaningfully encompass that infinite range of substitutes.⁷⁸ There may be effective competition among a narrow group of products, and the loss of that competition may be harmful, making the narrow group a relevant market, even if competitive constraints from significant substitutes are outside the group. The loss of both the competition between the narrow group of products and the significant substitutes outside that group may be even more harmful, but that does not prevent the narrow group from being a market in its own right.

Relevant markets need not have precise metes and bounds. Some substitutes may be closer, and others more distant, and defining a market necessarily requires including some substitutes and excluding others. Defining a relevant market sometimes requires a line-drawing exercise around product features, such as size, quality, distances, customer segment, or prices. There can be many places to draw that line and properly define a relevant market. The Agencies recognize that such scenarios are common, and indeed “fuzziness would seem inherent in any attempt to delineate the relevant . . . market.”⁷⁹ Market participants may use the term “market” colloquially to refer to a broader or different set of products than those that would be needed to constitute a valid relevant antitrust market.

The Agencies rely on several tools to demonstrate that a market is a relevant antitrust market. For example, the Agencies may rely on any one or more of the following to identify a relevant antitrust market.

- A. Direct evidence of substantial competition between the merging parties can demonstrate that a relevant market exists in which the merger may substantially lessen competition and can be sufficient to identify the line of commerce and section of the country affected by a merger, even if the metes and bounds of the market are only broadly characterized.

⁷⁶ *Id.* at 325.

⁷⁷ *Id.* (“[W]ithin [a] broad market, well-defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes.”). Multiple overlapping markets can be appropriately defined relevant markets. For example, a merger to monopoly for food worldwide would lessen competition in well-defined relevant markets for, among others, food, baked goods, cookies, low-fat cookies, and premium low-fat chocolate chip cookies. Illegality in any of these in any city or town comprising a relevant geographic market would suffice to prohibit the merger, and the fact that one area comprises a relevant market does not mean a larger, smaller, or overlapping area could not as well.

⁷⁸ *United States v. Cont’l Can Co.*, 378 U.S. 441, 449 (1964); *see also FTC v. Advoc. Health Care Network*, 841 F.3d 460, 469 (7th Cir. 2016) (“A geographic market does not need to include all of the firm’s competitors; it needs to include the competitors that would substantially constrain the firm’s price-increasing ability.” (cleaned up)).

⁷⁹ *Phila. Nat’l Bank*, 374 U.S. at 360 n.37.

- B. Direct evidence of the exercise of market power can demonstrate the existence of a relevant market in which that power exists. This evidence can be valuable when assessing the risk that a dominant position may be entrenched, maintained, or extended, since the same evidence identifies market power and can be sufficient to identify the line of commerce and section of the country affected by a merger, even if the metes and bounds of the market are only broadly characterized.
- C. A relevant market can be identified from evidence on observed market characteristics (“practical indicia”), such as industry or public recognition of the submarket as a separate economic entity, the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.⁸⁰ Various practical indicia may identify a relevant market in different settings.
- D. Another common method employed by courts and the Agencies is the hypothetical monopolist test.⁸¹ This test examines whether a proposed market is too narrow by asking whether a hypothetical monopolist over this market could profitably worsen terms significantly, for example, by raising price. An analogous hypothetical monopsonist test applies when considering the impact of a merger on competition among buyers.

The Agencies use these tools to define relevant markets because they each leverage market realities to identify an area of effective competition.

Section 4.3.A below describes the Hypothetical Monopolist Test in greater detail. Section 4.3.B addresses issues that may arise when defining relevant markets in several specific scenarios.

4.3.A. The Hypothetical Monopolist Test

This Section describes the Hypothetical Monopolist Test, which is a method by which the Agencies often define relevant antitrust markets. As outlined above, a relevant antitrust market is an area of effective competition. The Hypothetical Monopolist/Monopsonist Test (“HMT”) evaluates whether a group of products is sufficiently broad to constitute a relevant antitrust market. To do so, the HMT asks whether eliminating the competition among the group of products by combining them under the control of a hypothetical monopolist likely would lead to a worsening of terms for customers. The Agencies generally focus their assessment on the constraints from competition, rather than on constraints from regulation, entry, or other market changes. The Agencies are concerned with the impact on economic incentives and assume the hypothetical monopolist would seek to maximize profits.

When evaluating a merger of sellers, the HMT asks whether a hypothetical profit-maximizing firm, not prevented by regulation from worsening terms, that was the only present and future seller of a group of products (“hypothetical monopolist”) likely would undertake at least a small but significant and non-transitory increase in price (“SSNIP”) or other worsening of terms (“SSNIPT”) for at least one

⁸⁰ *Brown Shoe*, 370 U.S. at 325, *quoted in United States v. U.S. Sugar Corp.*, 73 F.4th 197, 204-07 (3d Cir. 2023) (affirming district court’s application of *Brown Shoe* practical indicia to evaluate relevant product market that included, based on the unique facts of the industry, those distributors who “could counteract monopolistic restrictions by releasing their own supplies”).

⁸¹ *See FTC v. Penn State Hershey Med. Center*, 838 F.3d 327, 338 (3d Cir. 2016). While these guidelines focus on applying the hypothetical monopolist test in analyzing mergers, the test can be adapted for similar purposes in cases involving alleged monopolization or other conduct. *See, e.g., McWane, Inc. v. FTC*, 783 F.3d 814, 829-30 (11th Cir. 2015).

product in the group.⁸² For the purpose of analyzing this issue, the terms of sale of products outside the candidate market are held constant. Analogously, when considering a merger of buyers, the Agencies ask the equivalent question for a hypothetical monopsonist. This Section often focuses on merging sellers to simplify exposition.

4.3.B. Implementing the Hypothetical Monopolist Test

The SSNIPT. A SSNIPT may entail worsening terms along any dimension of competition, including price (SSNIP), but also other terms (broadly defined) such as quality, service, capacity investment, choice of product variety or features, or innovative effort.

Input and Labor Markets. When the competition at issue involves firms buying inputs or employing labor, the HMT considers whether the hypothetical monopsonist would undertake at least a SSNIPT, such as a decrease in the offered price or a worsening of the terms of trade offered to suppliers, or a decrease in the wage offered to workers or a worsening of their working conditions or benefits.

The Geographic Dimension of the Market. The hypothetical monopolist test is generally applied to a group of products together with a geographic region to determine a relevant market, though for ease of exposition the two dimensions are discussed separately, with geographic market definition discussed in Section 4.3.D.2.

Negotiations or Auctions. The HMT is stated in terms of a hypothetical monopolist *undertaking* a SSNIPT. This covers settings where the hypothetical monopolist sets terms and makes them worse. It also covers settings where firms bargain, and the hypothetical monopolist would have a stronger bargaining position that would likely lead it to extract a SSNIPT during negotiations, or where firms sell their products in an auction, and the bids submitted by the hypothetical monopolist would result in the purchasers of its products experiencing a SSNIPT.

Benchmark for the SSNIPT. The HMT asks whether the hypothetical monopolist likely would worsen terms relative to those that likely would prevail absent the proposed merger. In some cases, the Agencies will use as a benchmark different outcomes than those prevailing prior to the merger. For example, if outcomes are likely to change absent the merger, e.g., because of innovation, entry, exit, or exogenous trends, the Agencies may use anticipated future outcomes as the benchmark. Or, if suppliers in the market are coordinating prior to the merger, the Agencies may use a benchmark that reflects conditions that would arise if coordination were to break down. When evaluating whether a merging firm is dominant (Guideline 6), the Agencies may use terms that likely would prevail in a more competitive market as a benchmark.⁸³

⁸² If the pricing incentives of the firms supplying the products in the group differ substantially from those of the hypothetical monopolist, for reasons other than the latter's control over a larger group of substitutes, the Agencies may instead employ the concept of a hypothetical profit-maximizing cartel comprised of the firms (with all their products) that sell the products in the candidate market. This approach is most likely to be appropriate if the merging firms sell products outside the candidate market that significantly affect their pricing incentives for products in the candidate market. This could occur, for example, if the candidate market is one for durable equipment and the firms selling that equipment derive substantial net revenues from selling spare parts and service for that equipment. Analogous considerations apply when considering a SSNIPT for terms other than price.

⁸³ In the entrenchment context, if the inquiry is being conducted after market or monopoly power has already been exercised, using prevailing prices can lead to defining markets too broadly and thus inferring that dominance does not exist when, in

Magnitude of the SSNIPT. What constitutes a “small but significant” worsening of terms depends upon the nature of the industry and the merging firms’ positions in it, the ways that firms compete, and the dimension of competition at issue. When considering price, the Agencies will often use a SSNIP of five percent of the price charged by firms for the products or services to which the merging firms contribute value. The Agencies, however, may consider a different term or a price increase that is larger or smaller than five percent.⁸⁴

The Agencies may base a SSNIP on explicit or implicit prices for the firms’ specific contribution to the value of the product sold, or an upper bound on the firms’ specific contribution, where these can be identified with reasonable clarity. For example, the Agencies may derive an implicit price for the service of transporting oil over a pipeline as the difference between the price the pipeline firm paid for oil at one end and the price it sold the oil for at the other and base the SSNIP on this implicit price.

4.3.C. Evidence and Tools for Carrying Out the Hypothetical Monopolist Test

Section 4.2 describes some of the qualitative and quantitative evidence and tools the Agencies can use to assess the extent of competition among firms. The Agencies can use similar evidence and analogous tools to apply the HMT, in particular to assess whether competition among a set of firms likely leads to better terms than a hypothetical monopolist would undertake.

To assess whether the hypothetical monopolist likely would undertake at least a SSNIP on one or more products in the candidate market, the Agencies sometimes interpret the qualitative and quantitative evidence using an economic model of the profitability to the hypothetical monopolist of undertaking price increases; the Agencies may adapt these tools to apply to other forms of SSNIPTs.

One approach utilizes the concept of a “recapture rate” (the percentage of sales lost by one product in the candidate market, when its price alone rises, that is recaptured by other products in the candidate market). A price increase is profitable when the recapture rate is high enough that the incremental profits from the increased price plus the incremental profits from the recaptured sales going to other products in the candidate market exceed the profits lost when sales are diverted outside the candidate market. It is possible that a price increase is profitable even if a majority of sales are diverted outside the candidate market, for example if the profits on the lost sales are relatively low or the profits on the recaptured sales are relatively high.

Sometimes evidence is presented in the form of “critical loss analysis,” which can be used to assess whether undertaking at least a SSNIPT on one or more products in a candidate market would raise or lower the hypothetical monopolist’s profits. Critical loss analysis compares the magnitude of the two offsetting effects resulting from the worsening of terms. The “critical loss” is defined as the number of lost unit sales that would leave profits unchanged. The “predicted loss” is defined as the number of unit sales that the hypothetical monopolist is predicted to lose due to the worsening of terms. The worsening of terms raises the hypothetical monopolist’s profits if the predicted loss is less than the

fact, it does. The problem with using prevailing prices to define the market when a firm is already dominant is known as the “Cellophane Fallacy.”

⁸⁴ The five percent price increase is not a threshold of competitive harm from the merger. Because the five percent SSNIP is a minimum expected effect of a hypothetical monopolist of an *entire* market, the actual predicted effect of a merger within that market may be significantly lower than five percent. A merger within a well-defined market that causes undue concentration can be illegal even if the predicted price increase is well below the SSNIP of five percent.

critical loss. While this “breakeven” analysis differs somewhat from the profit-maximizing analysis called for by the HMT, it can sometimes be informative.

The Agencies require that estimates of the predicted loss be consistent with other evidence, including the pre-merger margins of products in the candidate market used to calculate the critical loss. Unless the firms are engaging in coordinated interaction, high pre-merger margins normally indicate that each firm’s product individually faces demand that is not highly sensitive to price. Higher pre-merger margins thus indicate a smaller predicted loss as well as a smaller critical loss. The higher the pre-merger margin, the smaller the recapture rate⁸⁵ necessary for the candidate market to satisfy the hypothetical monopolist test. Similar considerations inform other analyses of the profitability of a price increase.

4.3.D. Market Definition in Certain Specific Settings

This Section provides details on market definition in several specific common settings. In much of this section, concepts are presented for the scenario where the merger involves sellers. In some cases, clarifications are provided as to how the concepts apply to merging buyers; in general, the concepts apply in an analogous way.

4.3.D.1. Targeted Trading Partners

If the merged firm could profitably target a subset of customers for changes in prices or other terms, the Agencies may identify relevant markets defined around those targeted customers. The Agencies may do so even if firms are not currently targeting specific customer groups but could do so after the merger.

For targeting to be feasible, two conditions typically must be met. First, the suppliers engaging in targeting must be able to set different terms for targeted customers than other customers. This may involve identification of individual customers to which different terms are offered or offering different terms to different types of customers based on observable characteristics.⁸⁶ Markets for targeted customers need not have precise metes and bounds. In particular, defining a relevant market for targeted customers sometimes requires a line-drawing exercise on observable characteristics. There can be many places to draw that line and properly define a relevant market. Second, the targeted customers must not be likely to defeat a targeted worsening of terms by arbitrage (e.g., by purchasing indirectly from or through other customers). Arbitrage may be difficult if it would void warranties or make service more difficult or costly for customers, and it is inherently impossible for many services. Arbitrage on a modest scale may be possible but sufficiently costly or limited, for example due to transaction costs or search costs, that it would not deter or defeat a discriminatory pricing strategy.

If prices are negotiated or otherwise set individually, for example through a procurement auction, there may be relevant markets that are as narrow as an individual customer. Nonetheless, for analytic convenience, the Agencies may define cluster markets for groups of targeted customers for whom the

⁸⁵ The recapture rate is sometimes referred to as the aggregate diversion ratio, defined in Section 4.2.B.

⁸⁶ In some cases, firms offer one or more versions of products or services defined by their characteristics (where brand might be a characteristic). When customers can select among these products and terms do not vary by customer, the Agencies will typically define markets based on products rather than the targeted customers. In such cases, relevant antitrust markets may include only some of the differentiated products, for example products with only “basic” features, or products with “premium features.” The tools described in Section 4.2 can be used to assess competition among differentiated products.

conditions of competition are reasonably similar. (See Section 4.3.D.4 for further discussion of cluster markets.)

Analogous considerations arise for a merger involving one or more buyers or employers. In this case, the analysis considers whether buyers target suppliers, for example by paying targeted suppliers or workers less, or by degrading the terms of supply contracts for targeted suppliers. Arbitrage would involve a targeted supplier selling to the buyer indirectly, through a different supplier who could obtain more favorable terms from the buyer.

If the HMT is applied in a setting where targeting of customers is feasible, it requires that a hypothetical profit-maximizing firm that was the only present or future seller of the relevant product(s) to customers in the targeted group would undertake at least a SSNIPT on some, though not necessarily all, customers in that group. The products sold to those customers form a relevant market if the hypothetical monopolist likely would undertake at least a SSNIPT despite the potential for customers to substitute away from the product or to take advantage of arbitrage. In this exercise, the terms of sale for products sold to all customers outside the region are held constant.

4.3.D.2. Geographic Markets

A relevant antitrust market is an area of effective competition, comprising both product (or service) and geographic elements. A market's geography depends on the limits that distance puts on some customers' willingness or ability to substitute to some products, or some suppliers' willingness or ability to serve some customers. Factors that may limit the geographic scope of the market include transportation costs, language, regulation, tariff and non-tariff trade barriers, custom and familiarity, reputation, and local service availability.

4.3.D.2.a. Geographic Markets Based on the Locations of Suppliers

The Agencies sometimes define geographic markets as regions encompassing a group of supplier locations. When they do, the geographic market's scope is determined by customers' willingness to switch between suppliers. Geographic markets of this type often apply when customers receive goods or services at suppliers' facilities, for example when customers buy in-person from retail stores. A single firm may offer the same product in a number of locations, both within a single geographic market or across geographic markets; customers' willingness to substitute between products may depend on the location of the supplier. When calculating market shares, sales made from supplier locations in the geographic market are included, regardless of whether the customer making the purchase travelled from outside the boundaries of the geographic market (see Section 4.4 for more detail about calculating market shares).

If the HMT is used to evaluate the geographic scope of the market, it requires that a hypothetical profit-maximizing firm that was the only present or future supplier of the relevant product(s) at supplier locations in the region likely would undertake at least a SSNIPT in at least one location. In this exercise, the terms of sale for products sold to all customers at facilities outside the region are typically held constant.⁸⁷

⁸⁷ In some circumstances, as when the merging parties operate in multiple geographies, if applying the HMT, the Agencies may apply a "Hypothetical Cartel" framework for market definition, following the approach outlined in Section 4.3.A, n.81.

4.3.D.2.b. Geographic Markets Based on Targeting of Customers by Location

When targeting based on customer location is feasible (see Section 4.3.D.1), the Agencies may define geographic markets as a region encompassing a group of customers.⁸⁸ For example, geographic markets may sometimes be defined this way when suppliers deliver their products or services to customers' locations, or tailor terms of trade based on customers' locations. Competitors in the market are firms that sell to customers that are located in the specified region. Some suppliers may be located outside the boundaries of the geographic market, but their sales to customers located within the market are included when calculating market shares (see Section 4.4 for more detail about calculating market shares).

If prices are negotiated individually with customers that may be targeted, geographic markets may be as narrow as individual customers. Nonetheless, the Agencies often define a market for a cluster of customers located within a region if the conditions of competition are reasonably similar for these customers. (See Section 4.3.D.4 for further discussion of cluster markets.)

A firm's attempt to target customers in a particular area with worsened terms can sometimes be undermined if some customers in the region substitute by travelling outside it to purchase the product. Arbitrage by customers on a modest scale may be possible but sufficiently costly or limited that it would not deter or defeat a targeting strategy.⁸⁹

If the HMT is used to evaluate market definition when customers may be targeted by location, it requires that a hypothetical profit-maximizing firm that was the only present or future seller of the relevant product(s) to customers in the region likely would undertake at least a SSNIPT on some, though not necessarily all, customers in that region. The products sold in that region form a relevant market if the hypothetical monopolist would undertake at least a SSNIPT despite the potential for customers to substitute away from the product or to locations outside the region. In this exercise, the terms of sale for products sold to all customers outside the region are held constant.⁹⁰

4.3.D.3. Supplier Responses

Market definition focuses solely on demand substitution factors, that is, on customers' ability and willingness to substitute away from one product or location to another in response to a price increase or other worsening of terms. Supplier responses may be considered in the analysis of competition between firms (Guideline 2 and Section 4.2), entry and repositioning (Section 3.2), and in calculating market shares and concentration (Section 4.4).

4.3.D.4. Cluster Markets

A relevant antitrust market is generally a group of products that are substitutes for each other. However, when the competitive conditions for multiple relevant markets are reasonably similar, it may be appropriate to aggregate the products in these markets into a "cluster market" for analytic convenience, even though not all products in the cluster are substitutes for each other. For example, competing hospitals may each provide a wide range of acute health care services. Acute care for one health issue is not a substitute for acute care for a different health issue. Nevertheless, the Agencies may

⁸⁸ For customers operating in multiple locations, only those customer locations within the targeted region are included in the market.

⁸⁹ Arbitrage by suppliers is a type of supplier response and is thus not considered in market definition. (See Section 4.3.D.3)

⁹⁰ In some circumstances, as when the merging parties operate in multiple geographies, the Agencies may apply a "Hypothetical Cartel" framework for market definition, as described in Section 4.3.A, n.81.

aggregate them into a cluster market for acute care services if the conditions of competition are reasonably similar across the services in the cluster.

The Agencies need not separately analyze market definition for each product included in the cluster market, and market shares will typically be calculated for the cluster market as a whole.

Analogously, the Agencies sometimes define a market as a cluster of targeted customers (see Section 4.3.D.1) or a cluster of customers located in a region (see Section 4.3.D.2.b).

4.3.D.5. *Bundled Product Markets*

Firms may sell a combination of products as a bundle or a “package deal,” rather than offering products “*a la carte*,” that is, separately as standalone products. Different bundles offered by the same or different firms might package together different combinations of component products and therefore be differentiated according to the composition of the bundle. If the components of a bundled product are also available separately, the bundle may be offered at a price that represents a discount relative to the sum of the *a la carte* product prices.

The Agencies take a flexible approach based on the specific circumstances to determine whether a candidate market that includes one or more bundled products, standalone products, or both is a relevant antitrust market. In some cases, a relevant market may consist of only bundled products. A market composed of only bundled products might be a relevant antitrust market even if there is significant competition from the unbundled products. In other cases, a relevant market may include both bundled products and some unbundled component products.

Even in cases where firms commonly sell combinations of products or services as a bundle or a “package deal,” relevant antitrust markets do not necessarily include product bundles. In some cases, a relevant market may be analyzed as a cluster market, as discussed in Section 4.3.D.4.

4.3.D.6. *One-Stop Shop Markets*

In some settings, the Agencies may consider a candidate market that includes one or more “one-stop shops,” where customers can select a combination of products to purchase from a single seller, either in a single purchase instance or in a sequence of purchases. Products are commonly sold at a one-stop shop when customers value the convenience, which might arise because of transaction costs or search costs, savings of time, transportation costs, or familiarity with the store or web site.

A multi-product retailer such as a grocery store or online retailer is an example of a one-stop shop. Customers can select a particular basket of groceries from a range of available goods and different customers may select different baskets. Some customers may make multiple stops at specialty shops (e.g., butcher, baker, greengrocer), or they may do the bulk of their shopping at a one-stop shop (the grocery store) but also shop at specialty shops for particular product categories.

There are several ways in which markets may be defined in one-stop shop settings, depending on market realities, and the Agencies may further define more than one relevant antitrust market for a particular merger. For example, a relevant market may consist of only one-stop shops, even if there is significant competition from specialty shops; or it may include both one-stop shops and specialty shops. When a product category is sold by both one-stop shops and specialty suppliers (such as a type of produce sold in grocery stores and produce stands), the Agencies may define relevant antitrust markets for the product category sold by a particular type of supplier, or it may include multiple types of suppliers.

4.3.D.7. Market Definition When There is Harm to Innovation

When considering harm to competition in innovation, market definition may follow the same approaches that are used to analyze other dimensions of competition. In the case where a merger may substantially lessen competition by decreasing incentives to innovate, the Agencies may define relevant antitrust markets around the products that would result from that innovation if successful, even if those products do not yet exist.⁹¹ In some cases, the Agencies may analyze different relevant markets when considering innovation than when considering other dimensions of competition.

4.3.D.8. Market Definition for Input Markets and Labor Markets

The same market definition tools and principles discussed above can be used for input markets and labor markets, where labor is a particular type of input. In input markets, firms compete with each other to attract suppliers, including workers. Therefore, input suppliers are analogous to customers in the discussions above about market definition. In defining relevant markets, the Agencies focus on the alternatives available to input suppliers. An antitrust input market consists of a group of products and a geographic area defined by the location of the buyers or input suppliers. Just as buyers of a product may consider products to be differentiated according to the brand or the identity of the seller, suppliers of a product or service may consider different buyers to be differentiated. For example, if the suppliers are contractors, they may have distinct preferences about who they provide services to, due to different working conditions, location, reliability of buyers in terms of paying invoices on time, or the propensity of the buyer to make unexpected changes to specifications.

The HMT considers whether a hypothetical monopsonist likely would undertake a SSNIPT, such as a reduction in price paid for inputs, or imposing less favorable terms on suppliers. (See Section 4.2.C for more discussion about competition in settings where terms are set through auctions and negotiations, as is common for input markets.)

When defining a market for labor the Agencies will consider the job opportunities available to workers who supply a relevant type of labor service, where worker choice among jobs or between geographic areas is the analog of consumer choices among products and regions when defining a product market. The Agencies may consider workers' willingness to switch in response to changes to wages or other aspects of working conditions, such as changes to benefits or other non-wage compensation, or adoption of less flexible scheduling. Depending on the occupation, alternative job opportunities might include the same occupation with alternative employers, or alternative occupations. Geographic market definition may involve considering workers' willingness or ability to commute, including the availability of public transportation. The product and geographic market definition may involve assessing whether workers may be targeted for less favorable wages or other terms of employment according to factors such as education, experience, certifications, or work locations. The Agencies may define cluster markets for different jobs when firms employ workers in a variety of jobs characterized by similar competitive conditions (see Section 4.3.D.4).

4.4. Calculating Market Shares and Concentration

This subsection further describes how the Agencies calculate market shares and concentration metrics.

⁹¹ See *Illumina*, slip op. at 12 (affirming a relevant market defined around “what . . . developers reasonably sought to achieve, not what they currently had to offer”).

As discussed above, the Agencies may use evidence about market shares and market concentration as part of their analysis. These structural measures can provide insight into the market power of firms as well as into the extent to which they compete. Although any market that is properly identified using the methods in Section 4.3 is valid, the extent to which structural measures calculated in that market are probative in any given context depends on a number of considerations. The following market considerations affect the extent to which structural measures are probative in any given context.⁹²

First, structural measures may be probative if the market used to estimate them includes the products that are the focus of the competitive concern that the structural inquiry intends to address. For example, the concentration measures discussed in Guideline 1 will be most probative about whether the merger eliminates substantial competition between the merging parties when calculated on a market that includes at least one competing product from each merging firm.

Second, the market used to estimate shares should be broad enough that it contains sufficient additional products so that a loss of competition among all the suppliers of the products in the market would lead to significantly worse terms for at least some customers of at least one product. Markets identified using the various tools in Section 4.3 can satisfy this condition—for example, all markets that satisfy the HMT do so.

Third, the competitive significance of the parties may be understated by their share when calculated on a market that is broader than needed to satisfy the considerations above, particularly when the market includes products that are more distant substitutes, either in the product or geographic dimension, for those produced by the parties.

4.4.A. Market Participants

All firms that currently supply products (or consume products, when buyers merge) in a relevant market are considered participants in that market. Vertically integrated firms are also included to the extent that their inclusion accurately reflects their competitive significance. Firms not currently supplying products in the relevant market, but that have committed to entering the market in the near future, are also considered market participants.

Firms that are not currently active in a relevant market, but that very likely would rapidly enter with direct competitive impact in the event of a small but significant change in competitive conditions, without incurring significant sunk costs, are also considered market participants. These firms are termed “rapid entrants.” Sunk costs are entry or exit costs that cannot be recovered outside a relevant market. Entry that would take place more slowly in response to a change in competitive conditions, or that requires firms to incur significant sunk costs, is considered in Section 3.2.

Firms that are active in the relevant product market but not in the relevant geographic market may be rapid entrants. Other things equal, such firms are most likely to be rapid entrants if they are already active in geographies that are close to the geographic market. Factors such as transportation

⁹² For simplicity, the discussion in the text focuses on the case where concerns arise that involve competition among the suppliers of products; analogous considerations may also arise for suppliers of services, or when concerns arise about competition among buyers of a product or service, or when analyzing market shares in certain specific settings (see Section 4.3.D).

costs are important; or for services or digital goods, other factors may be important, such as language or regulation.

In markets for relatively homogeneous goods where a supplier's ability to compete depends predominantly on its costs and its capacity, and not on other factors such as experience or reputation in the relevant market, a supplier with efficient idle capacity, or readily available "swing" capacity currently used in adjacent markets that can easily and profitably be shifted to serve the relevant market, may be a rapid entrant. However, idle capacity may be inefficient, and capacity used in adjacent markets may not be available, so a firm's possession of idle or swing capacity alone does not make that firm a rapid entrant.

4.4.B. Market Shares

The Agencies normally calculate product market shares for all firms that currently supply products (or consume products, when buyers merge) in a relevant market, subject to the availability of data. The Agencies measure each firm's market share using metrics that are informative about the market realities of competition in the particular market and firms' future competitive significance. When interpreting shares based on historical data, the Agencies may consider whether significant recent or reasonably foreseeable changes to market conditions suggest that a firm's shares overstate or understate its future competitive significance.

How market shares are calculated may further depend on the characteristics of a particular market, and on the availability of data. Moreover, multiple metrics may be informative in any particular case. For example:

- Revenues in a relevant market often provide a readily available basis on which to compute shares and are often a good measure of attractiveness to customers.
- Unit sales may provide a useful measure of competitive significance in cases where one unit of a low-priced product can serve as a close substitute for one unit of a higher-priced product. For example, a new, much less expensive product may have great competitive significance if it substantially erodes the revenues earned by older, higher-priced products, even if it earns relatively low revenues.
- Revenues earned from recently acquired customers (or paid to recently acquired buyers, in the case of merging buyers) may provide a useful measure of competitive significance of firms in cases where trading partners sign long-term contracts, face switching costs, or tend to re-evaluate their relationships only occasionally.
- Measures based on capacities or reserves may be used to calculate market shares in markets for homogeneous products where a firm's competitive significance may derive principally from its ability and incentive to rapidly expand production in a relevant market in response to a price increase or output reduction by others in that market (or to rapidly expand its purchasing in the case of merging buyers).
- Non-price indicators, such as number of users or frequency of use, may be useful indicators in markets where price forms a relatively small or no part of the exchange of value.

Exhibit 10

(REDACTED IN ITS ENTIRETY)

Exhibit 11

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UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

QUALCOMM INCORPORATED, a)
Delaware corporation,)
QUALCOMM TECHNOLOGIES, INC.,)
a Delaware corporation,)
)
Plaintiffs,)
)
vs.) C.A. No.: 24-49-MN
)
ARM HOLDINGS PLC, f/k/a,)
ARM LTD. a U.K. corporation,)
)
Defendants.)
_____)

VIDEOTAPED DEPOSITION OF JONATHAN WEISER
San Diego, California
Friday, July 11, 2025

Reported by:
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7/11/2025

Qualcomm Incorporated, et al. v. Arm Holdings PLC, et al. Jonathan Weiser

<p style="text-align: right;">Page 6</p> <p>1 Yon Sohn of Qualcomm. 2 THE VIDEOGRAPHER: Thank you. Will the court 3 reporter please now swear the witness. 4 5 JONATHAN WEISER, 6 having been first duly sworn, was examined 7 and testified as follows: 8 9 EXAMINATION 10 BY MR. EMERICK: 11 Q. Good morning, Mr. Weiser. 12 A. Good morning. 13 Q. Any reason why you can't give complete and 14 accurate testimony today? 15 A. I don't believe so. 16 Q. Are you aware of any ways in which ARM is 17 unfairly competing with Qualcomm? 18 MS. ZAPPALA: Objection to form. 19 THE WITNESS: Uh, to my knowledge, I haven't 20 investigated that, I don't know. 21 BY MR. EMERICK: 22 Q. During your time at Qualcomm, were you aware of 23 any ways in which ARM was unfairly competing with 24 Qualcomm? 25 MS. ZAPPALA: Objection to form.</p>	<p style="text-align: right;">Page 8</p> <p>1 ARM supports. 2 BY MR. EMERICK: 3 Q. Qualcomm could develop chips using the RISC-V 4 architecture? 5 MS. ZAPPALA: Objection to form. 6 THE WITNESS: Qualcomm could develop chips 7 using RISC-V. 8 BY MR. EMERICK: 9 Q. Qualcomm can develop chips using the X86 10 architecture? 11 MS. ZAPPALA: Objection to form. 12 THE WITNESS: Qualcomm could use the X86 13 architecture. 14 BY MR. EMERICK: 15 Q. Can Qualcomm develop its own architecture? 16 MS. ZAPPALA: Objection to form. 17 THE WITNESS: Qualcomm could develop its own 18 architecture like any company. 19 BY MR. EMERICK: 20 Q. Does ARM have a monopoly over the instruction 21 set market? 22 MS. ZAPPALA: Objection to form, vague and 23 ambiguous. 24 THE WITNESS: Yeah, I believe that ARM does 25 have a monopoly in the mobile space, wireless space,</p>
<p style="text-align: right;">Page 7</p> <p>1 THE WITNESS: I'm not aware of anything 2 specifically. 3 BY MR. EMERICK: 4 Q. Is ARM the only company that makes an 5 instruction set architecture? 6 A. No, I believe there are others. 7 Q. What are the others you're aware of? 8 A. I believe Intel makes instruction set 9 architecture. I believe there's a few other instruction 10 sets architectures, one may be RISC-V. I'm not sure 11 which company's behind that. Off the top of my head 12 today, that's all I can remember. 13 Q. Does Qualcomm have a choice in which 14 architecture it chooses to use? 15 MS. ZAPPALA: Objection to form. 16 THE WITNESS: Qualcomm is able to select 17 different architectures, yes. 18 BY QUESTIONER: 19 Q. Qualcomm doesn't -- 20 A. Can you speak up a little? 21 Q. Sure. Qualcomm doesn't have to use the ARM 22 architecture, right? 23 MS. ZAPPALA: Objection to form. 24 THE WITNESS: Qualcomm is not obligated under 25 contract to use the instruction set architecture that</p>	<p style="text-align: right;">Page 9</p> <p>1 cell phone technology with regard to its adoption of its 2 architecture for use in that -- in that segment. 3 BY MS. ZAPPALA: 4 Q. Can you describe ARM's monopoly in the mobile 5 space? 6 MS. ZAPPALA: Objection to form. Calls for 7 legal conclusion. 8 THE WITNESS: ARM has virtually a hundred 9 percent of the mobile segment for architecture 10 solutions. 11 BY MR. EMERICK: 12 Q. And so is the conclusion that ARM has a 13 monopoly in the mobile space just based on the current 14 market share that it has or is there any other basis? 15 MS. ZAPPALA: Objection to form. Misstates 16 prior testimony and calls for legal conclusion. 17 THE WITNESS: Yeah, I believe ARM has a 18 monopoly in the mobile space based on its market share. 19 BY MR. EMERICK: 20 Q. Anything other than the market share as a basis 21 for your opinion that ARM has a monopoly in the mobile 22 space? 23 MS. ZAPPALA: Same objection. 24 THE WITNESS: As I sit here today, nothing pops 25 up in my brain.</p>

3 (Pages 6 to 9)

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1 BY MR. EMERICK:
2 Q. Yeah, I -- I'm assuming it's a comma because
3 it's not a -- there's no verb if it's a period.
4 A. It doesn't look like a comma.
5 Q. Okay. Well, whether it's a comma or a period,
6 do you understand the language prior to [REDACTED]
7 [REDACTED] semicolon, providing any limitation on what
8 [REDACTED] after that semicolon?
9 A. I'm trying to understand your question.
10 MS. ZAPPALA: Object to form.
11 BY MR. EMERICK:
12 Q. The language up to from -- from [REDACTED]
13 [REDACTED] all the way up to
14 [REDACTED] does that language modify or
15 restrict the time periods in which [REDACTED]
16 [REDACTED] what follows that semicolon, [REDACTED]
17 [REDACTED] ?
18 MS. ZAPPALA: Objection to form.
19 THE WITNESS: I think you've got -- you've got
20 to apply this language and, again, I think you have to
21 go back to the intent of the parties. The intent of the
22 parties was [REDACTED]
23 [REDACTED]
24 [REDACTED]
25 [REDACTED]

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1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 BY MR. EMERICK:
5 Q. And I'm not asking you about the intent of the
6 parties right now, I'm asking about the contract
7 language and how you understand that works.
8 So do you understand the contract language to
9 provide [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 MS. ZAPPALA: Objection to form and you can
13 answer the question in your 30(b)(6) capacity.
14 THE WITNESS: Yeah, I don't believe it has [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 BY MR. EMERICK:
25 Q. All right. Where it says, [REDACTED]

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1 [REDACTED]
2 [REDACTED]
3 [REDACTED] do you see that?
4 A. I do.
5 Q. [REDACTED] right?
6 MS. ZAPPALA: Objection to form.
7 THE WITNESS: [REDACTED]
8 [REDACTED]
9 MS. ZAPPALA: Just a minor -- [REDACTED]
10 [REDACTED], just for
11 the record.
12 BY MR. EMERICK:
13 Q. Is there anything in the [REDACTED]
14 [REDACTED]
15 [REDACTED] ?
16 MS. ZAPPALA: Objection to form.
17 THE WITNESS: [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 BY MR. EMERICK:
21 Q. Is there anything in the agreement that says
22 [REDACTED]
23 [REDACTED] ?
24 A. I think it depends on the facts and
25 circumstances.

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1 Q. Is there anything in the agreement?
2 A. There's no mechanism of -- in the agreement.
3 MR. EMERICK: Can we take like a two-minute
4 break?
5 MS. ZAPPALA: Sure.
6 THE VIDEOGRAPHER: Going off the record at
7 3:40.
8 (Brief recess was taken.)
9 THE VIDEOGRAPHER: We are back on the record at
10 3:43 p.m.
11 MR. EMERICK: I'll pass the witness.
12 MS. ZAPPALA: I have no questions for the
13 witness.
14 THE VIDEOGRAPHER: Anything, Cathy?
15 THE REPORTER: Let me just confirm on the record
16 copy orders.
17 MR. EMERICK: Paralegal.
18 MS. ZAPPALA: Paralegal. And I designated it
19 highly confidential attorneys' eyes only, but I just
20 want to confirm this on the record.
21 THE VIDEOGRAPHER: This concludes today's
22 deposition of Jonathan Weiser at 3:44.
23 (Deposition concluded at 3:44 p.m.)
24
25

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Exhibit 12

(REDACTED IN ITS ENTIRETY)

Exhibit 13

(REDACTED IN ITS ENTIRETY)